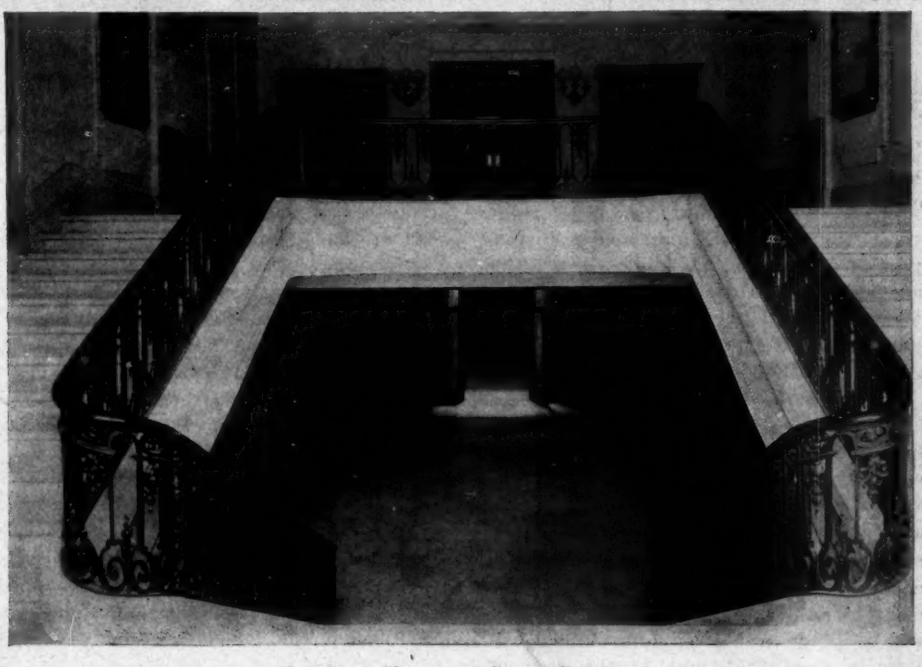
VOL. XI NO. 16 CHICAGO, APRIL 18, 1907 $2.00 PER YEAR

MOTOR AGE

MAGNIFICENT A. C. A. CLUB HOUSE READY

A. C. A. CLUB HOUSE, NOW READY



ENTRANCE HALL AND GRAND STAIRCASE

NEW YORK, April 15—Eight years ago two motor car owners in New York, seeing there was quite a number of machines in use, and foreseeing there would at no distant date be very many more on the road, got together, and as a result of their confab a public call was issued for those interested in the new locomotion to meet at the Waldorf-Astoria and discuss the advisability of organizing a motor club. These promoters were Whitney Lyon and George F. Chamberlain. The meeting was duly held on June 7, 1899; Mr. Chamberlain was elected chairman and Captain Homer W. Hedge, secretary. About thirty persons were present, and then and there the Automobile Club of America was born. A charter was secured on August 16, 1899, and quarters were secured at the Waldorf for the time being.

Later the club secured quarters at Fifty-eighth street and Fifth avenue and remained there until the increasing importance of the motor movement, as reflected in the club membership, made larger and more complete quarters imperative. So in May, 1905, it was decided to build a club house which should be all that a motor club house ought to be, and which would provide for the future. A building committee was appointed, consisting of Colgate Hoyt, chairman; Dr. Schuyler Skaats Wheeler and Albert R. Shattuck. The task of building the house was entrusted to Ernest Flagg, of New York, and the work has now been finished after a total expenditure of $750,000. The building is an eight-story one, of fireproof construction, and embodies all the improvements that modern architectural skill can suggest. It has all the appointments of a social club and also an extensive and complete garage and repair shop, where the facilities for handling the cars of members are superior to any except the very finest public garages; it probably has no superiors. There is ample accommodation for the present membership of 1,500—which includes 500 associate members—and plenty of room for growth. The active membership is at present limited to 1,000 and the list is full. The associate membership is unlimited.

Next Thursday the clubhouse, which is now finished and is being given the final touches that will make it habitable, will be opened with appropriate ceremonies. The new building stands on the north side of Fifty-fourth street, between Broadway and Eighth avenue, towering high above the comparatively small buildings of a residential street. This location leaves little to be desired. The exterior treatment of the building is rather plain and dignified,

WOMEN'S RECEPTION ROOM—A COSY NOOK

LUXURIOUS APARTMENT FOR THE GOVERNORS

though there is sufficient quiet ornamentation to give relief to the eye. Light colored stone, terra cotta and white brick are the materials used on the street front. The main entrance to the club rooms is near the eastern end of the street front, through great oaken doors under a stone portico surmounted by a globe on which an eagle perches with outstretched wings. West of the club entrance are the great garage doors, and smaller entrances for employes. The frontage is 131 feet.

Passing through the oak doors and crossing a spacious vestibule, the visitor finds himself in a great white hall, from the far end of which a broad flight of marble stairs leads upward between black ebony and wrought iron railings. The ceiling, supported by great beams finished in white, is given sufficient decorative treatment to relieve the bare effect that wide white spaces would produce. This hall extends from the front to the rear of the building.

Behind and below the stairs, and reached by a few steps under the left side of the great staircase, is the women's room. The general effect of this room is extremely quiet and restful. The furniture is of French walnut, with a smooth, dull finish. One of the large double doors on the left side of the great hall opens into the locker room for club members. This is a long, narrow, white room with lockers on each side in two tiers, the upper tier being reached by a steel gallery and stairway. There are more than a hundred of these lockers, each with a special key. The locker room extends from the extreme rear of the building, but does not run to the front, and in the angle thus left are the offices of the garage superintendent and his staff and the telephone switchboard and booths. The switchboard is the center of a very complete system that reaches every room in the building. The booths are reached from the locker room. The grand staircase leads to a wide landing with a bay of high leaded glass windows and a window seat cushioned with red leather. From the landing two staircases, one on either side, lead up to the second landing, where there are two large map cases, one for foreign and the other for American road maps. A high table is provided on which these maps can be conveniently examined. High overhead are hung, by wrought iron chains of massive proportions, three great cylindrical lanterns of colored glass, in which are electric lights. To the right of the second landing, as one ascends the stairs, is a sort of vestibule for coat racks and the like, and there also is a telephone on a little table. From this vestibule a double door of oak gives access to the crowning glory of the clubhouse—the assembly room. This modest designation gives no idea of the simple magnificence of the great hall, 100 feet long and some 40 feet wide with heavily-beamed ceiling more than 20 feet from the polished parquet floor. The assembly room extends east and west along the front of the building, its eastern end being at the extreme eastern end of the building. Six huge windows, reaching from the floor nearly to the ceiling, admit floods of light, and six great doors, balancing the windows, lead from the opposite side of the room to the vestibules and to the grill-room adjoining. At the east end of the room is a huge fireplace, and the walls on either side of the fireplace are lined with book cases rising to a height equal to that of the oak paneling that extends around the room—about 8 feet. Above the paneling the walls are of white cement in tiled effects, a sea-shell design being introduced as a relief. Twelve antique bronze fixtures, of special design, are placed around the room in the spaces between the windows and doors, at a height of about 12 feet. Each carries some twenty-five or thirty frosted electric lamps, so

MAGNIFICENT ASSEMBLY ROOM IN THE NEW A. C. A. HOME

ELEVATOR FOR MOTOR CAR USE

ENTRANCE TO THE CLUB GARAGE

disposed that their light is thrown upward on the ceiling and thence reflected downward. At what might be called the library end of the room there are tall brass electric lamps with red silk shades placed on mission-finished oak library tables. Two great white fluted pillars stand some 20 feet from this end of the room, and it is understood that all necessary equipment will be provided for transforming the space back of the pillars into a stage where theatrical performances may be given. At the opposite or west end is a massive balcony, of mission oak like the furniture, for an orchestra. The entrance to the balcony is through a door leading from an upper floor in the rear. Near the windows are a number of small round tables and chairs to match. All the furniture and woodwork is in mission oak, and the upholstering is done in red leather. The room is in premier Francais style throughout, and is copied from a room in Chateau Cheverney in France by special permission. Back of the assembly room is the grill-room; and it may be that this will be even more attractive to members than the magnificence of the former. It is a low, quiet room, furnished very plainly in mission oak, and is roomy and inviting. Its dimensions give ample space for the tables, large and small, scattered through it. Off the grill-room is a buffet. The culinary department is in keeping with the grill-room in that it is complete and up-to-date.

The directors' room opens off the grill room opposite the kitchen. This has green carpet, green upholstering and green walls, and the furniture, including the long round-ended table, is of polished mahogany. On the next floor up are the offices of the secretary and the billiard room. In the latter are two billiard tables and a pool table. Carpet and walls are of a warm red, as is also the upholstering of the mahogany furniture. There are two entrances to the billiard room, one from a corridor reached directly from the stairs and the other from Secretary Butler's private office. Passing through this, the next room is a long office where Mr. Butler's assistants have their desks behind a high railing; and at one end of this room is the office of the bureau of tours.

The ground floor, reached by two large doors from the street, is a sort of assembly room for cars; here machines gather waiting to be taken by the two huge electric elevators to their quarters on the floors above, or stand while being supplied with gasoline and oil. The doors are divided horizontally in the middle and, as they are hauled up, they fold in the middle and swing on hinges at the top. There is a turntable in front of the elevators.

SHOWING THE GRILL ROOM AND CAFE IN NEW BUILDING

Two electric elevators, each of 4 tons capacity and measuring 10 by 18 feet, run from basement to top floor. Above the first floor are four floors devoted to car storage and, at the top, the machine and repair shop; assembly room, grill-room and offices occupy most of the second floor, so on this floor there is no garage space. The garage floors are fitted up with every modern convenience—air pressure for inflating tires, revolving washers, telephones, portable lights and so on. Buckets of water and of sand, and special fire extinguishers are numerous, and all entrances are fitted with heavy iron doors which automatically close in case of fire. Steel wire partitions will ultimately be installed, so each car can be enclosed in a separate locked space; from 300 to 400 cars can be accommodated all told. On each garage floor is a room where the drivers can amuse themselves. These, as all other rooms, are fitted with telephones.

The repair department on the top floor is a huge room, the whole extent of the building, lighted from all sides by large windows and from the roof by skylights, making the conditions ideal.

THREE MORE SHOWS ARE HELD

Exhibitions in Seattle, Denver and Montreal Prove Successful —Coast Affair a Unique One, Dealer Opening Garage Giving Rivals Chance To Display Their Wares

Seattle, Wash., April 10—Seattle has had its first motor show, and while it does not compare with those held in the east, it has served its purpose. Probably no show was ever before given under like conditions. The entire expense was carried by the Pacific Coast Automobile Co., which in this way opened its new garage at 1414-16 Broadway. The company originally intended to have an ordinary opening, but later the idea occurred to Manager Salling to invite the other dealers of the city to participate and show their cars. Every one partook of this bit of western hospitality, and in all sixty cars were shown. The following were shown: Cadillac, Reliance truck, Aerocar, Cartercar, Oldsmobile, Buick, Pope-Toledo, Stearns, Thomas Flyer, Tourist, Austin, Knox truck, Babcock electric, Mitchell, Packard and Winton. The cars shown represented a value of a quarter of a million. The main salesroom of the Pacific Coast garage proved excellent for displaying the number of cars entered. The arrangements were excellent in every respct. There was no admission fee, and 3 days were devoted to the show. Saturday, April 6, was society night, and a band discoursed music on that occasion. The show also remained open Sunday. It goes without saying that under such conditions that the show was well patronized. As a result quite a number of prospective deals were closed. The dealers already have commenced to plan for a show along more metropolitan lines next year, and as the business here is rapidly increasing the necessary support from the manufacturers undoubtedly will be forthcoming. If not the dealers will go it alone.

Three Days at Denver

Denver, Colo., April 13—Denver's fourth annual show opened in Coliseum hall the night of April 11 and continued until tonight. Exhibits of thirty-five cars, six motor cycles, the Jones speedometer, the Continental Oil Co. and the motor department of a fire insurance company were attractively set in a bower of tree branches covered with apple blossoms and morning glories giving the whole a marked spring effect. Ten local dealers, representing twenty-five different makes of cars, and two motorcycle dealers with the same number of makes, occupied the floor space, and this just left enough room for the large crowds to comfortably move about. At present Denver has no building large enough to accommodate exhibits from all the dealers in the city—they number twenty-three—and this accounts for the limited number that did exhibit. By the time the next season arrives the great auditorium now under construction and to occupy a block of ground will be ready, then all dealers will be able to exhibit. From the point of attendance this year's show exceeded the preceding one two to one. A year ago this date the license number issued by the city was 825; this date it is 1,350—an evidence of the growing popularity of the motor in this city. The official list of exhibitors is as follows:

Matthewson Automobile Co.—One Thomas Flyer touring car, one Thomas Forty touring car, one Thomas roadster, one 24-28-horsepower Columbia, one Columbia Victoria phaeton electric, model 69; one Woods electric, Queen Victoria

Columbia Automobile Co.—One Colburn touring car; one Locomobile touring car; one White steamer touring car; one Autocar runabout; one Rauch & Lang electric

Colorado Automobile Co.—One Pope-Toledo touring car; one model G Cadillac; one model M Cadillac; one model H Cadillac and one Baker electric

Smith Automobile Co.—One Great Smith touring car; one American roadster, one Mora roadster; one Mora tourer; one Marvel runabout

Herbert Havens—One Lambert touring car

Western Auto Co.—One model Wayne touring car.

Stanley Webster—One Moline

S. C. Shearer—One Haynes touring car

Studebaker Mfg. Co.—One touring car, one electric

Tom Botterill—One Pierce Great Arrow

Oliver P. Fritchie—One Fritchie electric stanhope, one Fritchie electric runabout

Reo Automobile Co.—Complete line of Reo touring cars and runabouts

Kennedy & Barker—Armac motor cycle

Brown & Beck—Apache motor cycle

Fred H. Williams—Yale motor cycle

R. C. Peete—Jones speedometer

Vacuum Cleaner Co.

Canadian Show Success

Montreal, April 14—The second anual Canadian show which ended last night was a brilliant success from every viewpoint, the trade as well as the patrons of the affair expressing their satisfaction with the exhibition. The building in which the show was held has a floor space of about 30,000 square feet and every foot of it was utilized. In fact, so great was the demand for space it was necessary to put up an annex in which were displayed large motor engines, motor boats and sportsmen's specialties. What made the success of the show all the more remarkable was that the worst snowstorm of the winter raged during the week—over 2 feet of the beautiful coming down, while a blizzard raged at the same time. At the conclusion of the affair last night Manager Jeffray announced he would promote two of them next year—one in Toronto in March and the other in Montreal in April.

One of the features of the week was the display made by the Comet Motor Car Co which showed a car of its own construction which follows closely the French in design. The Wilson exhibit was in charge of B. S. Wilson and his six sons. In the way of mechanical features there was the Dunlop dismountable tire and rim, the invention of Dr. Doolittle. It will take any make of clincher and rim and tire can be taken off and replaced in 15 seconds, it is claimed. Several trucks were shown and the Wilson company sold one, the first of the kind in this vicinity. The exhibitors were as follows:

CARS

Dominion Motor Car Co.—Argyll, White steamer, Baker electric, Decauville

Auto Import Co.—Humber, Reo

Betts, Brown & Co.—Vulcan

Comet Motor Co.—Comet

Canadian Cycle and Motor Co.—Russell

Canadian Automobile Co.—Cadillac, Oldsmobile, Darracq

International Automobile Co.—Dragon, Gale, Wayne, de Dietrich

Wilson Automobile Co.—Pierce, Franklin, Buick, Knox, Babock electric, Rapid motor truck

Eastern Automobile Co.—Ford, Packard, Winton, Thomas, Stevens, Peerless, Maxwell, Clement-Bayard, Napier, D. A. C. truck

ACCESSORIES

John Miller & Sons
Franco-American Auto Co.
John Forman
Canadian Cycle and Motor Co.
Eastern Automobile Co.
Rubber Tire Wheel Co.
C. A. Shaler Co.
Pittsfield Spark Coil Co.
International Automobile Co.
Lincoln Electric Co.
Warner Instrument Co.
K-W Ignition Co.
Berlin Electric Co.
Canada Battery Co.
William H. Brodie Co.
S. F. Bancroft
Dunlop Tire and Rubber Goods Co.
Canadian Rubber Co.
Valve Seating Tool Co.
Diamond Rubber Co.

DUPUY GOES ABROAD

New York, April 13—Georges Dupuy, promoter of the proposed gold cup tour of Europe, sailed on the Vaderland today. On the ship with him was a Stearns touring car placed at his disposal by Wyckoff, Church & Partridge, local agents of the F. B. Stearns Co., in which he will make a run over the route to be followed by the American invaders. Clarence Shappecke accompanied him as mechanic. Madame Dupuy also went with him. On his arrival at Antwerp Dupuy says he will go direct to Paris to secure a block of seats for the grand prix, seats for the race being included in the $1,000 fee for the tour. He will start on his advance run on May 1. Besides making arrangements for the accomodation of the tourists Dupuy will compile a tour book. He expects to be back in this country by June 1 in time to arrange for the shipment of the invading cars on June 7 and the sailing of the tourists on June 20. Dupuy says he has received twenty-seven entries. Nineteen have already paid their fees. Entries will close on May 15.

STRENUOUS TRIP IN REO

San Francisco, Cal., April 12—A 1905 two-cylinder Reo, owned by L. T. Shettler, of Los Angeles, and driven by Harris M. Hanshue, made the trip from Los Angeles to this city over the same route as was followed by Ralph Owen in the Oldsmobile in 46 hours 55 minutes, traveling 70 miles more than did Owen and coming within 25 minutes of the Oldsmobile's time. He

only had one helper in the worst places, while two guides took him off the roads, in one case costing 7 hours' loss in time. The car also came on its own power all the way except when two mules were tried in the San Joaquin river but given up as useless. At this point the river was a mile wide. Owen crossed here on a barge. The object of this trip was to prove that a car carefully driven could duplicate Owen's trip in even better time. The total expense for the 500 miles was less than $250 and Hanshue had never been over the roads north of Bakersfield and yet drove the total 570 miles without sleep and very little sleep the night before. He was with Dingley in the Pope-Hartford in the recent race and walked more than half of the 50 miles from Tejon pass to Bakersfield when the Pope-Hartford car was put out of the race by a broken axle to telegraph for another. The only accident he had on the trip was when one front wheel came off. Bramlett was catapulted about 40 feet but Hanshue stuck in the car, which did not turn over. The wheel was soon again put on and no parts broken. On the whole Hanshue found the roads no better than on March 28 except across the Mojave desert, where the sandy formation had dried out some. The much-dreaded San Francisquito cañon, with its 106 fords, was gone through without any trouble, although the county road makers had been straightening the channel and cut out about a third of the fords, thus making the others deeper. The snow that was at the summit on March 28 when Hanshue passed through in the Pope-Hartford had melted and was coming down as water, making the whole flow of the stream nearly twice as great as on the day of the race. All the cars that day were stuck hours in the fords and all used horses and mules and tackle, but Hanshue drove through without once using tackle or help to do it.

CUP COURSE LENGTHENED

New York, April 17—Special telegram—Following a meeting of the plan and scope committee of the Long Island motor parkway yesterday, announcement was made that it has been decided to lengthen the course proposed for the Vanderbilt cup race so it will be about a 20-mile circuit as against the 16 miles originally planned, so the race probably will be fifteen laps aggregating 300 miles. Beyond this only routine business was transacted. An exaggerated report published today that the great storm of Easter Monday ruined Ormond beach for racing by the formation of a 50-foot-wide gully is incorrect. Though the storm swept away the telephone poles and also the timing stand in front of the clubhouse, the pier at Daytona and cut down the beach fully 2 feet in depth, it left the surface as hard and smooth as ever, though the lower beach does not allow of the beach being available for racing for as many hours as before.

TALK ON TIRE REFORM

A. L. A. M. Engineers Reduce Number of Sizes—Also Discuss Horsepower Rating

New York, April 12—At its regular monthly meeting today the mechanical branch of the Association of Licensed Automobile Manufacturers discussed the tire question, suggesting that the number of sizes of tires be reduced from twenty-three to eleven. The official report of the meeting, which embraces that of the tire committee, follows:

Tests show that the part of the tire nearest the ground and what is known as tread rubber, to give the best results should be of compound rubber, as pure rubber would not stand the continuous friction caused by coming in contact with the road surface. Near the center of the tire comes the breaker strip, made up of two or three layers of canvas separating the tread from the next layer of rubber or cushion stock. The cushion stock is usually of the highest class rubber, being only slightly compounded; the next layer towards the center is a five or six-ply fabric, frictioned inside and out. The degree of compounding can be obtained by the specific gravity of the rubber, it being known that the specific gravity of pure rubber is between .950 and .980. The ash, after burning the rubber at the low degree of heat, represents the degree of compounding independent of the sulphur used for vulcanization. To determine the strength, a strip of rubber is cut from each of the different layers of qualities in the tire, ¼ inch wide and ⅛ inch thick. One end is gripped and weights are then added to the other end until the strip breaks. A Para rubber shows high strength and the cheap rubber low strength. In determining the elasticity a similar strip is cut from the tires, ¼ inch by ⅛ inch, and a measured length of 10 centimeters is taken. The strip is then stretched between nails on a board until the 10 centimeters length becomes 30 centimeters. It is kept in this position for 24 hours, then released, and 10 minutes after release the permanent set taken. A good rubber has small permanent set; a poor and a cheap rubber has much permanent set.

Considerable discussion has been given to the relative merits of different size tires on front and rear wheels. The size of tires, of course, depends on the weight of a car and its gearing. Many manufacturers have found it to advantage to use a smaller diameter tire on the front wheels than on the rear, and careful investigation seems to prove this to be wise. First, it is much easier to steer, it having a smaller friction area on the ground surface; this makes the wear on the tire, as a whole, considerably less, with chances for punctures decreased. It has less weight in itself and is nearer proportion to the weight of the car, which is, of course, heavier in the rear. For high-powered cars, that is, cars required to attain a speed of from 40 to 60 miles an hour, the smaller the diameter of the front tire the less the danger in case of blow out or puncture. S. F. Edge has made several tests to determine the relative shock caused by punctures, of different size front tires, with the result that with a 3 or 3½-inch tire a car going 50 miles an hour would be thrown not over 6 or 8 feet, while with an explosion of a 5-inch tire it would be thrown from 30 to 40 feet. Economy and safety call for a smaller diameter front tire. Many do not think it an economy to carry two size tires, but in the long run it will be found more advantageous.

One of the first recommendations of the tire committee of the mechanical branch was the elimination of so many sizes of tires, that is, the wheel sizes. Up to the time the mechanical branch took hold of this matter there were twenty-three sizes of tires in the market, many of which were incapable of doing the maximum amount of work required owing to their being of wrong proportion, not only for the weight of the car, but the area of the ground surface. Experiments by the branch have resulted in a reduction of this number and the adoption of eleven sizes: 28 by 3, 30 by 3, 30 by 3½, 32 by 3½, 32 by 4, 34 by 3½, 34 by 4, 34 by 4½, 36 by 4, 36 by 4½, 36 by 5.

A great difficulty that has confronted the motor car manufacturers is the various sizes of rims on the market, thus causing considerable rim cutting to tires. Many of the rim makers of single piece rims had a uniform size diameter and depth of clinch, but not all. Through the efforts of the branch the rim makers have all agreed to a standard size rim to be inspected and passed by the tire makers who will guarantee any tire bearing the rim association's stamp.

A standard for horsepower rating and alcohol acetylene as a fuel were the subjects taken up at the afternoon session of the mechanical branch. The need of a universal method for computing horse power was discussed and suggestions for the adoption of an A. L. A. M. horsepower standard recommended. After having the advisability of a universal rating under consideration for several months, the standards suggested by the branch are to be taken from a brake test at the flywheel, in conjunction with a formula to be suggested by the test committee. Two units are to be used, the lower being the actual rating from the brake tests, as computed from an indicator at 1,000 feet per minute piston speed, and the higher number to be the maximum horsepower developed from superior workmanship or the result of a better type motor. For example, in a 20-24 horsepower motor, the 20 would be the actual horsepower at 1,000 feet per minute piston speed and the 24 the horsepower which would be developed when not under normal conditions.

Mr. White, of Barker & White, exponents of alcohol acetylene, made some radical statements as to the efficiency of the carbide alcohol mixture. Mr. White predicted that by September 1 alcohol could be obtained at a figure less than 20 cents per gallon, and that in certain places and in quantity, carbide could be purchased for this purpose at 1 cent per pound. He has proven that to get the best results half a pound of carbide should be used to a gallon of alcohol, this making the cost of the new fuel slightly over 20 cents a gallon to the consumer. Every gallon of denatured alcohol contains about 10 per cent water, which was found did not work as well as alcohol containing 18 or 20 per cent water. The addition of this extra water increasing the combustion qualities of the mixture. As engines are now built for the use of gasoline, it would be much more practical to adapt the fuel to the engine than the engine to the fuel.

A business meeting of the branch followed the regular session and three new members were added to the tire committee. The new members are S. D. Waldon, R. B. Jackson and E. F. Russell.

DAY OUT OF A. L. A. M.

New York, April 15—George H. Day was at A. L. A. M. headquarters today. He is now out of the licensed association altogether so far as any participation in the management goes. It now transpires that the executive committee at its meeting last Wednesday reluctantly accepted Mr. Day's resignation. E. H. Cutler will now assume the full title as well as the functions of general manager. It is certain Mr. Day's health will demand at least 2 years for rest and recuperation.

NEW PLANT FOR FORD

Detroit Concern Closes $100,000 Deal for Highland Park Property at Home City

Detroit, Mich., April 15—The formal exchange of papers has at last taken place and the Ford Motor Co. has come into control of the 60 acres out Woodward avenue contained in the Highland Park Jockey Club's abandoned plant. The announced consideration was $100,000. The deal with the Stevens estate, which has controlled the property, has been hanging fire for some weeks. Its successful conclusion enables the Ford people to announce plans for a new factory which have been formulating for over a year.

Work will begin immediately on the new building and the construction will be rushed so that by the latter part of August it is hoped the entire runabout department will be installed in its new quarters. This will mean the abandonment of the Mack avenue factory. The six-cylinder cars will be turned out at the present factory on Piquette avenue for the remainder of this year, but the whole plant is to be concentrated at Highland Park in time to handle the entire 1908 output of the Ford company.

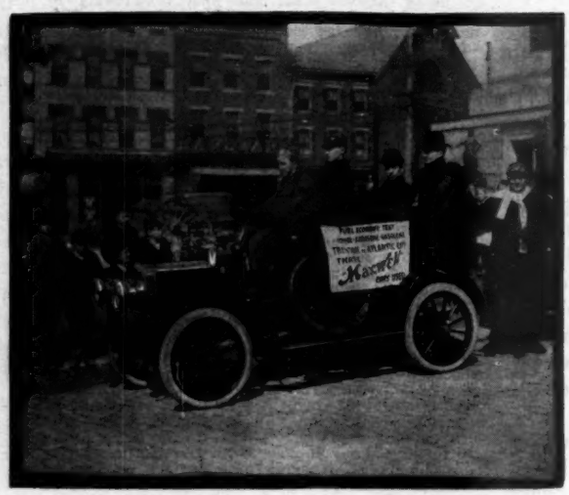
Henry Ford has been inspecting factories all over the country in his desire to get pointers for the new structure. He has decided on a general design similar in plan to that of the Pierce factory in Buffalo. The new Ford plant accordingly will be of one-story construction throughout, this scheme being, Mr. Ford believes, best adapted to the needs of light and general convenience. It will be planned so additions can be made as the necessity arises, without altering the general purpose in the least.

The new owners of the property will maintain the excellent mile track for testing purposes. It is a perfect oval with easy and well banked turns and these will be raised somewhat in order to allow a car to be driven the entire mile at top speed. It will be the only exclusively motor car race course in the world and will undoubtedly afford a better chance at track records than anything of its size now in existence. The company's testers already are using the track for speeding purposes and excellent results have been attained by them.

In connection with the track, Advertising Manager Leroy Pelletier has planned a stunt which will undoubtedly make him the envy and despair of all other press agents. He announces a race meeting for alternate Saturdays during the year, the competitors to be the testers of his firm. A careful record of all the results will be kept and at the close of the season liberal rewards will be given for driving and testing. The competitors will draw for cars and no one will drive a car which he himself has tested out. This will afford not only a contest of driving, but also one of competent testing, as the tester who sends in the winning car to the competitions will be credited with its performance even though he himself has been beaten by it. Mr. Pelletier also plans a series of races for Ford owners.

MAXWELL TEST RESULTS

New York, April 15—John P. Slack, one of the expert observers on the fuel test trip of the three Maxwells from Trenton, N. J., to Atlantic City, on which a different fuel was used by each of the cars, reports the following results: "On weighing in the three cars on arrival at Atlantic City, with passengers and baggage as carried, the alcohol car showed 2,560 pounds, kerosene 2,470 and the gasoline 2,250. As to fuel consumption on emptying the tanks, the alcohol car used



MAXWELL CAR STARTING FROM TRENTON, N. J.

14½ gallons, the combination kerosene and gasoline car used 3 gallons of the former and 5 of the latter, while the car on gasoline alone used 7½ gallons. The distance covered by the three Maxwell fuel cars was 103½ miles."

AMERICAN NAPIER FAILURE

Boston, Mass., April 11—On the petition of three Boston creditors, whose claims aggregate $1,300, Judge Dodge, in the United States district court today appointed Arthur J. Farnsworth as receiver of the Napier Motor Co. of America. Mr. Farnsworth is vice-president of the concern. The three creditors also filed a bankruptcy petition against the company. The directors admitted the inability of the concern to pay its outstanding obligations nad expressed a willingness to have it adjudged bankrupt. The liabilities amount of $140,000. The assets have not been estimated. Receiver Farnsworth says that in all probability the corporation will be reorganized in the very near future.

TARVIA FOR ROAD USE

Chicago Interested in the Treatment Given Its South Side Boulevards Last Season

Chicago, April 15—The advent of spring has forcibly called the attention of the park commissioners in various sections of the city to the need for repairing the boulevards under their control, the ravages of winter showing up now that the traffic has increased. Just the kind of treatment that will be given the roads has not definitely been decided. On the south side last year several experiments were tried, one stretch of road—that on Michigan avenue extending from Twenty-second to Thirty-fifth street and on Grand from Thirty-fifth to Fifty-first—being treated to tarvia, for which is claimed freedom from side washing or raveling and being dustless. Tarvia is applied hot to the macadam during a spell of warm dry weather. It filters into the top surface of the macadam and strengthens the natural bond of the stone, giving it an appearance resembling asphalt and capable of receiving equally heavy traction without sustaining damage. A tarviated road can be swept with street sweepers' brooms or flushed with a hose without damage, and on many tarviated streets this is done occasionally to alleviate the dust blown by the wind or carried on the road by regular traffic passing over it.

Householders who live near motor thoroughfares, as well as the motorists themselves, dread the summer dust nuisance and this is where tarvia is said to be of particular value. Everybody has seen roads where clouds of dust hang for many minutes in the air after the passage of a single motor car. Sprinkling is expensive, and instead of decreasing the nuisance actually increases it, it is argued. The constant use of water on the road breaks up the natural bond of the top dressing so mud is formed, which soon becomes dust again in the hot sun. Roads which are regularly sprinkled require re-surfacing much oftener than roads which can be left to themselves.

Oil for the purpose of suppression of dust has been used in many localities, especially in California where it is exceedingly cheap. It is only partially effective and it is said develops another nuisance on account of the damage it does to vehicles and to garments. For the suppression of dust, tarvia is recommended by the United States department of agriculture. It is a tar preparation of the right grade and character and sold by the manufacturers of coal tar products.

In France this material has been used since 1900, when the League for the Sup-

pression of Dust first reported successful experiments with it. This league was formed to abate a dust nuisance which was rapidly making the Riviera positively unpleasant in many sections, seriously damaging property values at the great resorts of that district. The use of tarvia was so successful it was adopted with modifications in all the departments of France and it is now the standard method of preserving macadam roads throughout the French republic.

It has been found, as set forth in many American consular reports, that the use of tar of the right kind results in economy of maintenance of upwards of 25 per cent, wear of the road is to a large degree prevented, and damage by water is altogether avoided.

GETS AFTER THE POLICE

Cincinnati, O., April 15—At the annual meeting of the Automobile Club of Cincinnati the following officers were elected for the ensuing year: President, Val Duttenhofer, Jr.; first vice-president, Dr. A. B. Heyl; second vice-president, F. N. Temple; secretary, Dr. L. S. Colter; treasurer, C. Gordon Neff; consulting engineer, E. J. Carpenter; directors: D. McKim Cooke, Gustav W. Drach, W. B. Gotherman, Dr. C. L. Bonifield, James A. Collins, Harry L. Mauss. The club voted to appropriate $1,000 to be expended by the committee on guide boards in Hamilton county. The committee reported that 135 of these signs would be needed. The following suggestions and resolution were adopted and the secretary instructed to send a copy of them to the chief of police with request that he enforce the laws: "The club should take a firm stand on the side of the law against fast driving. The chief of police should be informed that the club does not want the speed limit exceeded, particularly in the city. Turning into alleys at speed should be stopped; have the police arrest people with old or no tags; have the police arrest the smart people who put their tags on the front of the car. The law says the rear. Discountenance Gabriel horns for city use because the sound is too confusing; owners who are members of the club should agree that drivers arrested for fast driving, when the owner is not in the car, must pay their own fine or work them out."

LONG RACE ASSURED

Paris, April 5—The Chinese government has officially declared that the Pekin-Paris tour may proceed through China and the date has been fixed for June 10. M. Cormier, of the de Dion people, will proceed 3 weeks in advance from Pekin with a camel caravan which will carry gasoline and stores for those stages passing through deserts or away from the railway. during the long tour.

SHOW ONLY A SHADOW

Cordingley's Motor Exhibition in England Far from Being the Big Affair It Used To Be

London, April 6—The Cordingley show in the Agricultural hall, Islington, opened today, the shadow of its former self. The Cordingley show was the forerunner of every motor exhibition in this country. Prior to it the Automobile Club had held a show in Richmond Park, but as a result of inexperience the result was a financial deficit of $6,000. That so crippled the club that it was glad to hand over its rights to hold exhibitions to Mr. Cordingley, who took over the debt as well. Since that date, 1897, the show has been held in the Agricultural hall, Islington. Until 3 years ago its position as the greatest motor trade mart outside the Paris salon was undisputed. But when the Society of

DUSTLESS ROAD TREATED WITH TARVIA

Motor Manufacturers and Traders set out to make a good will of its own the tide of prosperity began to ebb. At first the decline was imperceptible, but in the show which has opened today this was only too perceptible in the shape of large empty spaces and a general appearance of incompleteness. For the first time second-hand cars have been impressed into the game to fill up space, and with but a few and quite unimportant British firms showing new cars the most of the ground floor which is occupied is given over to foreign exhibits. These include the S. P. A. of Turin, Florentia, Pieper Auto-Miscli, Adler, Aries, Metallurgique, Gracilis, Spyker, Westinghouse, Brasier, Horch, Mercedes and Nixte. America is represented by the Reo and Logan cars.

The heavy vehicle section is better, but following so closely upon the Olympian commercial vehicle exhibition the display naturally is not nearly as large as it was last year. Two each of the mixed gasoline-electric type are shown. The most interesting section undoubtedly is that under the auspices of the Aero Club. It consists of a large number of models of flying machines, aeroplanes, etc., and a number of balloons, dirigible and otherwise. For a motor exhibition the Cordingley show is nothing more nor less than a disappointment.

The great increase in the number of small motor exhibitions all over the country which was so marked during 1906 has put it in the power of the society to jump on Cordingley's as one of the superfluous and unnecessary exhibitions. The whole situation is going to be treated in a very drastic spirit—as in common with some shows—and it seems quite possible that a show in London, one in Dublin, one in Edinburgh and one in Manchester will complete the total show scheme.

KAISER A BOOSTER

Berlin, April 4—The German emperor does nothing by halves; not only did he give the initiative to the Taunus cup event on June 14 by presenting a valuable trophy to the committee, but he also has shown further interest by donating two other prizes, one for the best foreign, the other for the best home car outside the winning one. His 40-horsepower Mercedes, with the late C. Gray Dinsmore's driver, Werner, now head man in the imperial garage, at the wheel, took part in a recent prospecting tour around the course in order to enable a detailed report being made the emperor. In August and September a touring event having no connection with the race will take place promoted by the leading south German clubs, which originally intended the tour for an international one. This, however, clashed with the ideas of the Imperial A. C. and an amicable settlement was arrived at after much discussion. The tour was made a solely national one, although none of the magnificent prizes was withdrawn. The route has not been settled.

THOMPSON CONVALESCENT

New York, April 16—Jefferson De Mont Thompson, chairman of the racing board, who has been confined to his apartments by grip since February 23 is convalescent and was out today. He plans to call a meeting of the board for early next week, probably Tuesday. "While I have been laid up," said he, "I have been studying the rules for the grand prix, kaiser cup and Florio contests, translations of which I have had made. The surmise that the racing board probably will go no further in changing the present Vanderbilt cup rules than to make the cars competing in this year's European road races eligible is not far from correct. We want the entries of the foreigners and we are not yet in a position to initiate radical conditions of our own for our big contest."

N.H.Van Sicklen, Manager

MOTOR AGE

Charles P. Root, Editor

Subscription Two Dollars a Year
Foreign and Canada Four Dollars

1200 Michigan Avenue, Chicago

New York Office
29 West Forty Second Street

Published Every Thursday by the Trade Press Company
Entered at the Chicago Postoffice as Second Class Matter

The Western News Company of Chicago and Its Branches Supply Newsdealers

PROMISES, ONLY PROMISES

ORDINARILY men are known not by promises but by deeds—accomplishment is a basis for judgment. Years ago the American Motor League was formed—with good purposes and with a handful of enthusiasts manning the ship. It simmered down into peaceful sleep for a while, but was brought to life later on. It selected Isaac B. Potter to guide the ship and went sailing out on the briny deep; it is still sailing—on the Sea of Promise. Motor Age has great respect for Isaac B. Potter, his ability and his fighting qualifications. It believes he is to day the right man, but that he is in the wrong place—that he is throwing away his time and that his organization is not accomplishing what it has promised to do or what it is capable of doing. A few years ago the American Motor League and the American Automobile Association endeavored to become one organization, and it was through no fault of Mr. Potter's that the consolidation was not perfected—it was because of the temerity and the vanity of the members of the American Automobile Association. It was then that Mr. Potter, roused to fighting pitch, declared that he himself and the organization of which he was the head—the American Motor League—would fight to a finish. The fight is almost over now. It will be admitted the American Motor League has issued a few road maps, has formed a few consulates, has appointed a few consuls—has it done anything else and has motordom been apprised of the deeds so performed, if performed? Has Mr. Potter builded a great organization that is a power in the halls of legislation and of justice? Has Mr. Potter builded an organization that can honestly say it has promoted much for its members and for motorists who have been asked to become members? Has Mr. Potter builded an organization that has inspired respect and financial encouragement from motorists, to say nothing of enthusiasm? How many actual members has the American Motor League? When have its meetings been held? How much money has the organization; how much has it received during the past several years and for what was this money used? Have these questions been answered—voluntarily or otherwise? On the other hand, Isaac B. Potter's declaration to fight to the finish has been responsible for the life and spirit of the American Automobile Association—until this declaration it had accomplished little for the benefit of motoring. It is now, however, doing something that appears to be practical and its deeds are its best arguments for existence. Nothing can be gained by the presence of two national organizations—they are working at cross-purposes though apparently with similar objects in view. One is healthy and strong and in power—the other is an invalid with the one word—Promise—on its lips.

FARMERS AND MOTOR CARS

SOMETIME in the near future the motor car industry will awaken to the fact that the farmer is not to be overlooked as a good customer, as a good motorist and then as the most ardent advocate of not only better highways than we have at present but of really good roads all through the country; some day the industry will recognize in the farmer the one man to whom to cater in more than one way. The farmer is being converted to the use of the motor car as rapidly as can be expected and he is already a pretty good buyer of motor cars and the reason is the prosperity that has come to him during the past few years. Just as an indication of what may be expected from this class of citizen, the following from the Farmer's Call is of importance to the industry in all its numerous and important branches:

Some of our subscribers have been surprised at what we wrote last week about the farmers of Illinois buying touring cars costing with top and glass front $1,350 each. That already this year eleven of these cars should have been sent to one little railway station in Illinois for farmers, or that within the past 12 months more than forty of these cars should have been sold to farmers in one Illinois county alone—La Salle—seems almost improbable to them.

Well, it is all true. And the automobile people say the farmers have just begun to buy. More than one agency in Chicago has so far this year sold more automobiles to farmers than to town and city people! They are just beginning to work hard for the farmer trade, and it has proportions that astonish most of them.

Here are the ten counties having the greatest value of farm production according to the last census. The second column is area in square miles. The third gives the year's production, exclusive of the amount fed to live stock, but inclusive of live stock:

1—Lancaster, Pa.	965	$9,210,815
2—McLean, Ill.	1,166	8,831,515
3—Los Angeles, Cal.	4,000	7,527,530
4—Champaign, Ill.	1,000	7,311,102
5—La Salle, Ill.	1,152	7,201,557
6—Livingston, Ill.	1,026	7,088,482
7—Dane, Wis.	1,200	7,058,339
8—Cass, N. D.	1,764	6,825,887
9—Iroquois, Ill.	1,120	6,726,875
10—Fresno, Cal.	8,010	6,671,875

It will be observed that the two California counties have an area more than twice the five Illinois counties. The far-famed fruits and wheat of California do not compare with Illinois corn. If the list were extended, the eleventh county would be Cook county, Illinois, with an area of 710 square miles and an agricultural production in the last census year of $6,577,919. The great crop of these Illinois counties is corn. It is corn that brings directly and indirectly into the pockets of their farmers more money than all other farm crops combined.

It must be remembered that Illinois is not renowned for and has never startled the world by being able to point with any degree of pride to its miles upon miles of beautiful highways, whereas there are states that can consistently do a little boasting in this direction. If the Illinois farmers are buying motor cars despite the abominable highways upon which they must use them, what might be expected if the roads in the great middle west state were such as to come under the term improved? There are other sections of the country that are blessed—some with good roads, some with decent roads, some with passable roads and others are in the class with Illinois. Gradually the farmers are coming to the conclusion that there is more utility than mere pleasure to be found in the motor car—they are not now so sure that it is only the rich man's toy, and they are naturally taking to this form of locomotion as against the older and slower and more costly method wherein horses are used.

IN TOLERATING MOOD

EVIDENCE keeps pouring in indicating that at last those who are responsible for the lawmaking of the various states of the union have arrived at that state whereby the users of the motor cars can now be tolerated, whereas only a few short months ago such liberality was almost unheard of. It is becoming apparent that legislators are coming to the conclusion that speed conditions are not necessarily factors in determining what regulations should or should not be made for the government of the use of the motor car on the highways, for the ranting about high-powered cars has about ceased and there are other evidences that the motoring public is not expected to confine itself to the use of 8-horsepower runabouts. Effort has been made in many directions toward educating legislators with a view to obtaining laws that are more liberal than those now in existence—laws based more on the question of time, place and circumstances. Gradually the motoring laws of the different states will be so altered that there will be no mention of speed—it will all be put up to the operator, who will be made to suffer in proportion to the extent of his crime. Motoring is growing too fast to be headed off by unfavorable legislation.

BRITISHERS are becoming tired of the minor shows that have sprung up of late and that have proved costly and annoying beyond the profitable side of these affairs and have set to work to do away with as many as possible for the next season. Probably the small British shows are not similar to our own local shows, promoted by local interests, and therefore are a burden which the makers do not care to further shoulder. It would seem that these shows might prove of benefit to the agents if run on purely local lines, such as are those affairs in this country, but the makers cannot be blamed for taking a stand against such shows if they are called upon to support them entirely and to let the agents have all the benefit that may accrue—there is such a thing as running the show business into the ground.

DETROIT is bound to remain in front as a motor car manufacturing center, for its plants are growing almost every day and every now and then a new one is added. The new plant of the Ford company is evidence of the growth and strength of this place in the motor car manufacturing field. The beautiful part of the situation is that each new plant or each addition to an old one is along such improved lines that no other industry will be able to show such advancement as the one so prominently before the world at the present time. The new Ford plant is to include a track upon which tests are to be made as well as upon which races are to be held. This is not a new scheme, but it is doubtful if a full mile track is in operation by any other motor car manufacturing concern.

FAILURE on the part of the American Napier Co. to live through a business career need not necessarily mean anything—either against the Napier car or the foreign cars in general. While the tendency of Americans to buy home-made machines appears to be stronger every day, and while it is predicted the foreign car will not find a market in this country for all time to come, it may be stated without fear of contradiction that foreigners will find something of a market in this country for a number of years to come. But while this is true the American maker will also be making inroads on the trade abroad, so that when the balance of the motor car trade is reckoned it will be found that the position of the American makers is more desirable than that of the foreigners doing business in this country.

LITTLE by little the strength of organized motorists is becoming such that all the curses that have been heaped upon the users and drivers of motor cars will have changed to patronizing palaver before many months have passed. The growth of the American Automobile Association is such that today there are seven state associations in the body, with every prospect that within a couple of weeks at least four more will have been added. President Hotchkiss and Secretary Elliott evidently mean to carry out the promises made just before they were elected to lead the organization. It might be suggested that here is a chance for Mr. Potter and the American Motor League to begin to do something in the line of practical work and to let the world know what is being done at the same time.

GENEROSITY seems to be a characteristic of extreme westerners, as was indicated when the Pacific Coast Automobile Co., of Seattle, opened its doors and invited all the other dealers in town to bring in their samples and share with it in the little show it had announced to take place in its own store. Would this happen in New York, Chicago or some other city east of the Missouri river?

STANDARDIZATION of tires, as proposed by the engineers' branch of the A. L. A. M., ought to be well received by the tire makers and the trade generally, for it will permit the makers to devote all their energies toward the betterment of the product now being turned out and to get rid of a lot of special work that takes time and costs a good deal of money. The engineers have approved the 28, 30, 32, 34 and 36-inch sizes, while the diameters will be 3, 3½, 4, 4½ and 5 inches, although these diameters are worked with different combinations of sizes. Whereas there were twenty-three distinct sizes there will be but eleven if the engineers have their way—and they probably will, for the tire makers are only too willing to make such a change as long as they have the backing of the mechanical heads of the big motor car manufacturing concerns of the entire country.

NOTHING like the new home of the Automobile Club of America, which is being opened today, has ever been attempted by any other motoring organization—at least in this country. It is as complete as modern minds could make it and is a credit to the motoring fraternity, as will be seen from the description published in this issue of Motor Age. The feature that ought to appeal to the members is the garage and repair shop accommodations, the like of which is yet to be heard of. Surely the members ought to appreciate the efforts of those who have had the building in hand, but in all probability the proverbial kicker will bob up in due time and make his wants known.

THE WEEK IN BRIEF

Mechanical branch of A. L. A. M. suggests reducing number of sizes of tires from twenty-three to eleven; also discusses horsepower rating and alcohol-acetylene fuel.

Everything in readiness for formal opening of million dollar home of Automobile Club of America in New York; description of motoring palace.

Ford Motor Co. closes $100,000 deal for Highland Park property in Detroit on which it will erect a mammoth plant.

Chicago interested in tarvia experiments, as conducted on its south side boulevards; what the substance is.

Chairman Thompson, of A. A. A. racing board, convalescent; he talks on Vanderbilt cup rules.

Emperor William shows his interest in motoring by offering two more prizes for kaiser's cup race.

Results of Maxwell fuel test formally announced by experts in charge of demonstration.

Chairman Terry, of A. A. A. legislative committee, reports progress to President Hotchkiss.

Georges Dupuy sails for Europe to go over route to be followed by gold cup tourists.

George Day returns to New York; may have to go to Europe for his health.

COMING MOTOR EVENTS

April 25-28—Touring competition, under auspices of the Automobile Club of Turin.

April 28—Chauteau Thiery hill-climb.

May 1-15—Paris-Madrid touring competition to Madrid exhibition.

May 15-31—Automobile Club of the North, industrial vehicle competition.

May 18-21—Milan touring competition.

May 18-21—Auto-Cycle Club of France, Paris-Ostend-Paris.

May 24-27—Automobile Club of Austria, voiturette contest.

May 31—Automobile Club of Auvergne, Rochet-Schneider cup race over Auvergne circuit.

June 3-12—Herkomer cup tour in Germany.

June 14—German emperor's cup touring car race in Germany.

July 15-18—Ostend week.

August 2-13—Auvergne club meeting.

August 18-22—Ardennes circuit and coupe de Liederkerke.

September 1—Florio cup race, over Brescia circuit, Italy.

September 14-15—Mont Ventoux hill-climb, France.

September 15—Semmering hill-climb, Germany.

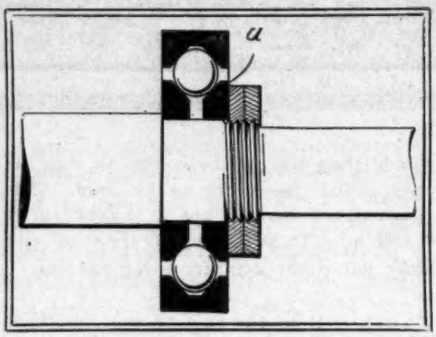
October 13—Dourdan kilometer contests, France.

BALL BEARINGS—THEIR USE, DESIGN AND CARE

UNTIL somewhat recently practically all ball bearings designed for carrying radial loads, combined with end thrusts, were of either the three-point or four-point variety, and there are many cars still in use which have bearings of these types. The principle of the four-point bearing, as in figure 1, is comparatively simple. The ball is geometrically the equivalent of a cylinder having the same points of contact as the ball and rolling about an axis through the center of the ball parallel with the shaft. The distribution of the load between the four points of contact makes this form of bearing very durable, and it is likewise very useful for combinations of radial and end thrust, and is perhaps particularly useful for carrying shafts having bevel gears, as for example in a live rear axle. This form of bearing may be adjusted after it wears with no great loss of accuracy, provided either the shaft or the outer race can shift a little endwise to conform to the new position of the balls after the movable cone a has been advanced by the adjusting nuts. It is common to carry the outer race of a bearing of this sort in an adjustable housing backed by set screws when, as in a live rear axle, an end thrust is to be sustained—see aa in figure 2.

The three-point ball bearing received its great popularity from its successful use in the bicycle. In this bearing the ball makes two contacts with the outer race or cup—a in figure 3—and as it rolls around this cup it is geometrically the equivalent of the cone indicated by the shade lines. A line b c connecting the two points of contact of this imaginary cone with the cup intersects the axis of the shaft at some point c; and it would be entirely possible to complete the bearing by an internal race with two points of contact at d and e. This, however, would make an awkward construction, and is unnecessary, since another cone may be imagined with the axis c f and its surface tangent to the surface of the ball, as in figure 4. The shaded cone on the shaft in this figure would roll correctly in contact with the ball, which is the geometric equivalent—so far as the inside cone is concerned—of the cone a b c. As the imaginary cones in figures 3 and 4 have the same axis, they will roll alike, the only difference being that the surface velocity of the shaded cone in figure 4 will not be the same as if the cone were in contact with the smaller imaginary cone inside the ball in figure 3.

In figure 5 is shown how a two-point inside race might be constructed. Evidently the sole requirement in any form of cup and cone bearing is that a line tangent to the point of contact



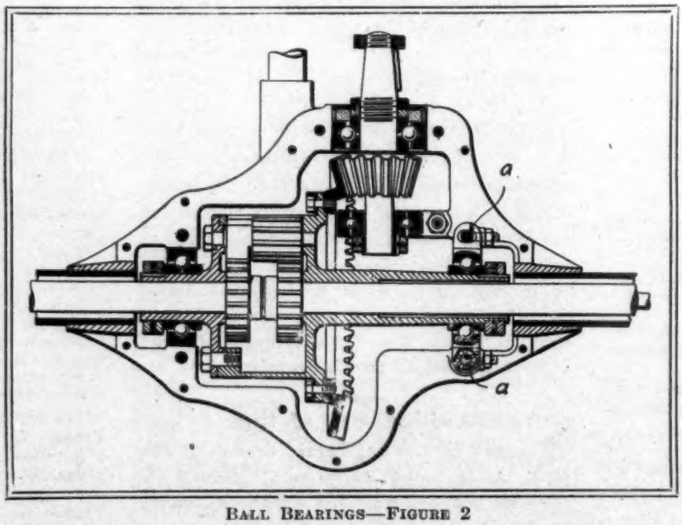
BALL BEARINGS—FIGURE 1

—in the case of a cone—or connecting the two points of contact—in the case of a cup or a two-point race—shall meet the similar line through the other point or points of contact at a common point in the axis of the shaft.

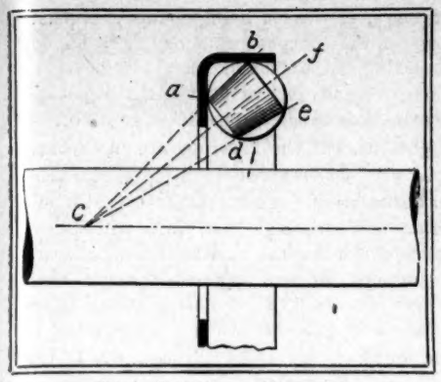
There are many reasons why bearings of this type have not shown the durability that might theoretically have been expected of them. One reason is doubtless the fact that the motion of the balls is not a pure rolling motion, as is often supposed, but is also sometimes a spinning motion. This will be most easily understood from study of the four-point bearing, figure 1, in which it is apparent that to obtain a pure rolling motion the axis of the ball's rotation would have to be parallel to the surface on which the ball rolled. As there are four such surfaces evidently this condition is impossible, and to the resultant spinning of the balls on the surfaces on which they roll undoubtedly is due the fact that bearings of this type, although they may be made very durable, cannot be made to show no perceptible wear. The same conditions as regards spinning of the balls is obtained in the cup of the three-point bearing in figure 2. The ball does not spin on the cone, and the fact that the cone is apt to wear more rapidly than the cup must be laid partly to the fact that the load, which is divided between two points of the cup, is concentrated at a single point on the cone, and partly also the obvious fact that as soon as the cone is adjusted in the slightest degree for wear the geometrical accuracy of the design is sacrificed, and a tangent to the point of contact no longer intersects the axis of the shaft at the correct point. Against this, to be sure, may be set the fact that the load at the point of contact with the cone is radial to the center of the ball, whereas when there are two points of contact the ball is made to act as a wedge and the actual combined pressure at the two points of contact is considerably in excess of the radial pressure of the ball on the cone. In addition to this fact, it might be pointed out that the cup and cone bearing is not the most efficient for supporting a radial load, since the pressure at the point of contact of the ball with the cone will be greater than the radial load sustained by the shaft. Stated in figures, the crushing load on the ball at the point d, figure 4, will be equal to the radial load on the shaft multiplied by the secant of the angle c a e.

It used to be thought that the more balls put into a bearing, regardless of their size, the greater would be the load which the bearing could carry, and consequently small balls and many of them were employed. It was soon found, however, that a few large balls were much better, and this was correctly attributed to the fact that the ball does not make contact at a "point," but flattens until the area of the minute surfaces in contact, multiplied by the average load per unit area, is equal to the total load at that point. A surface is necessary to sustain pressure, and if the ball in fact made contact only on a geometrical point—which has no area—it would be crushed no matter how strong the ball might be. Evidently a ball of smaller diameter must compress more, in order that a given area may be in contact, than a ball of large diameter, and the fiber stresses in the small ball will be correspondingly greater. The disparity between the small and large balls on this score is much more than enough to offset the numerical difference between the small and large balls that a bearing might contain.

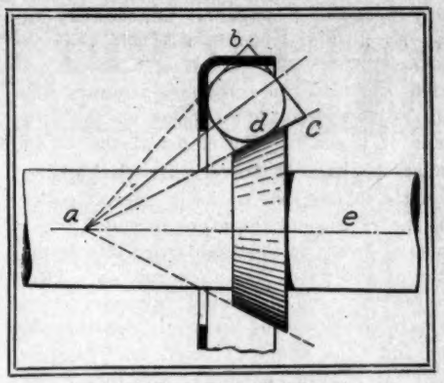
But there is another reason why a bearing of the old type with many small balls is not durable under load. That is the general fact that until quite recently it was the exception for balls of the same normal size to come from the factory either spherical or uniformly sized within the limits for successful use. Both the ball and its races are very hard, as is necessary for durability, but this same hardness prevents



BALL BEARINGS—FIGURE 2



BALL BEARINGS—FIGURE 3

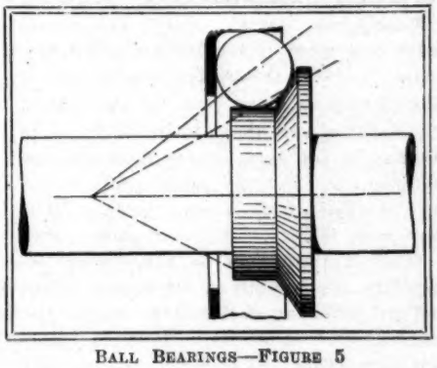


BALL BEARINGS—FIGURE 4

the ball from compressing to more than a very minute degree, and therefore, unless the balls are alike in size and form within a small fraction of a thousandth of an inch, some balls will be carrying more than their share of load and others little or none, and the load-carrying balls will be subjected to crushing stresses much beyond what they ought to endure. From this point of view alone it is evident that the fewer are the balls in the bearing the greater will be the likelihood of an approximately equal distribution of the load.

Other imperfections liable to creep into bearings of this sort are lack of uniformity in hardness of the balls, causing some to compress and therefore to wear more rapidly; irregular hardening, resulting in soft spots in the races, and lack of initial toughness in the materials of which the bearings are made. Most cup and cone bearings have balls of an average grade of tool steel, and the races are more apt to be mild steel case-hardened than tool steel hardened clear through. Again, the cups and cones may not be accurately ground, and are seldom as smooth as they should be; and the cups, even if they are accurate to start with, are very liable to be sprung slightly out of shape when pressed into place. The cones also will be affected by any inaccuracies of the shaft carrying them. All this is aside from such matters as the protection of the bearing from dirt, and the proper adjustment of the cone on the shaft—which latter is apt to be slighted. Bearings of this sort have to be adjusted every little while, and if adjustment is neglected long the bearing is practically ruined, so far as reliable service may be concerned.

In spite of all the deficiencies above enumerated, it is possible to get good service out of three-point or four-point bearings if one is willing to take a moderate amount of pains to see that they do not deteriorate. The first thing to do is to keep them packed with vaseline or soft mineral grease—no grease containing acid or graphite should be used—and occasionally the bearings should be tested for looseness of the balls. If more than the slightest amount of shake can be detected, the cone should be readjusted. It is necessary to remember that the work of holding the cone is really done by the locknut, which will take up any looseness in the threads of the nut next to the cone; consequently the latter is best screwed up as far as it will go and then backed off several notches of adjustment—the exact number to be determined by experiment—and the locknut then tightened. After the locknut is tightened the wheel or shaft should be tested by shaking, which should be slightly perceptible in all positions. After adjustment has been made till the bearing races have been worn out of round the bearing may be tight in one position and loose in another. If it is tight in any position it will soon destroy either the balls or the races. Occasionally a cup or cone, after it has become worn in one place, can be turned to bring the load on a fresh point, and thereby kept in service longer. Once or twice in a season, depending on the use of the car, the bearing should be opened and the balls, cup and cone cleaned and inspected for evidences of local wear. If any ball is pitted or chipped the entire set should be replaced at once and the old set thrown away or held in reserve for emergency use only. In purchasing new balls they should be calipered with a micrometer and should size alike within .0005 inch. It is quite common to find balls a thousandth or two thousandths above or below the diameter of the general run of balls. If the cup or cone shows signs of pitting or flaking, adjustments must be made very carefully, and the worn part should be replaced as soon as practicable. If neglected it will damage the balls and the bearing is likely to go to pieces suddenly.

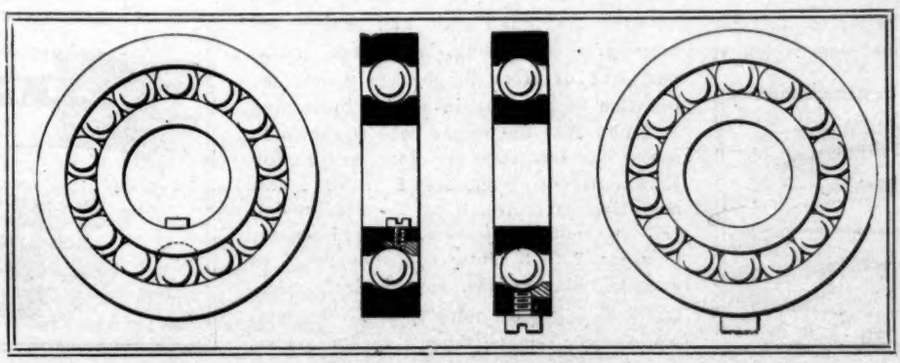


BALL BEARINGS—FIGURE 5

It is today recognized that the most efficient type of bearings for radial loads is the so-called annular type, which is today in general use by most of the leading makers. The balls in these bearings have only two points of contact, both of them in line with the load, and the motion is a pure rolling motion without spinning. Figure 6 shows two similar forms of these bearings in side view and section. Partly to retain the balls, without special appliances, and partly to increase the surface of the contact, the races are grooved in cross-section to a radius greater than the radius of the balls. In these bearings the balls are introduced through a special recess in the outer or inner race, which recess is then closed by a carefully fitted piece which completes the race and is held by a screw. The race containing this piece must be the stationary member of the bearing, and must be located so that the inserted piece will be on the unloaded side. For example, if the shaft revolves the inserted piece must be in the outer race, but if the shaft is stationary, as in a vehicle wheel, the inner race must contain the inserted piece.

In all cases where this type of bearing is used the race must be secured rigidly from endwise movement on the shaft on which it should be a light driving fit. The outer race of one bearing of the pair may likewise be held against endwise movement, but the outer race of the other bearing must be free to move endwise to accommodate itself to any slight difference in the location of the bearing. Otherwise the balls might be crushed by being wedged endwise between their races.

The slight radial end play for the annular ball bearing permits the shaft to spring slightly out of line without cramping the bearing. This is a very important point, not

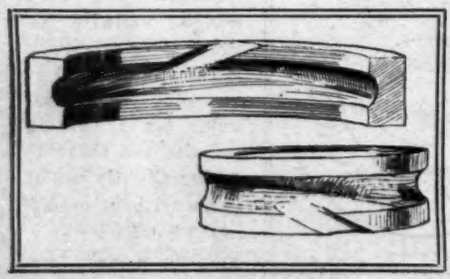


BALL BEARINGS—FIGURE 6

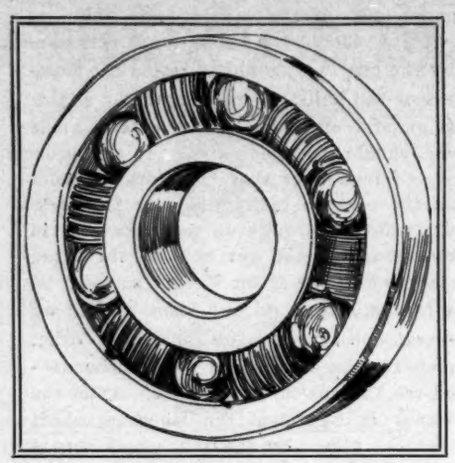
only because it makes it unnecessary to use an absolutely rigid shaft if that is inconvenient, but because it dispenses with the need for extremely accurate lining up between the bearings at the two ends of a shaft. The effect of this is to cause the balls to travel part of the time a little to one side of their normal paths on the races, and therefore to run a little faster—owing to the slightly greater diameter of the path they then roll on. This causes the clicking sound familiar under certain conditions of service in bearings of the full type above referred to. To prevent the clicking noise and also to get rid of the inserted piece and the limitations imposed by it, the "silent" type of annular bearing is very frequently used. In this type of bearing, one form of which is shown in figure 7, the balls are separated by coil springs containing felt pads saturated with oil. There is no recess in either race, and the balls are introduced by setting the races eccentric to each other, thereby permitting the balls to be slipped in, since the balls fill only about half of the circle in which they run. After the balls are all in they are separated and the springs introduced. Although for equal sizes this type of bearing will not carry as heavy loads as the other, the difference is not so great as might be supposed, since even with the greatest practicable accuracy it is impossible to distribute the load with absolute evenness between the balls of the full type, whereas the two or three points which in the silent type carry all the load are certain to divide the load fairly between them.

The best known makers of these bearings use extreme care in the selection of materials and in the finishing of the balls and races. The steel employed in the balls is a special product of much more than ordinary toughness, and is tempered nearly glass-hard. The makers claim that all the iron comes from a certain mine controlled by them. The balls and races are guaranteed to be true within .0001 inch. Extreme care is used by the makers in checking the conditions under which the bearings are used; consequently it is unusual to find these bearings commercially applied under disadvantageous conditions of load or design, and the makers' claim that their wear is practically imperceptible during the life of the machine seems to be very fairly borne out in practice.

Among the modified types of annular bearings may be mentioned one which at



BALL BEARINGS—FIGURE 8



BALL BEARINGS—FIGURE 7

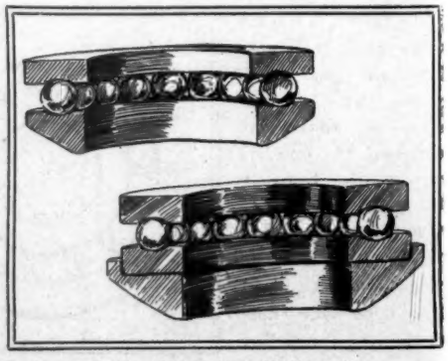
present is made only abroad, which resembles the "silent" type above mentioned in that no inserted piece is employed for the introduction and removal of balls. The balls, however, completely fill the race, and are inserted by being forced in under pressure, the races being made very shallow for this purpose and also thin enough to spring out of round when the balls are being forced in, without being permanently deformed. The idea is certainly audacious, but the bearings are in successful use by several leading motor car manufacturers. Among other types of annular ball bearings the main differences concern the manner in which the balls are introduced or are separated from each other. In one type of ball bearing, figure 8, shallow grooves are cut diagonally in the sides of the races through which the balls may be forced by moderate pressure. The grooves slant in the direction in which the balls are to run, so that there is no tendency for the balls to come out when they are once in.

The silent type of bearing above described will carry an end thrust approximately a quarter of the proper radial load, or it will carry a radial load and end thrust combined. Generally speaking, however, designers prefer to limit the annular bearing to its normal function of carrying the radial loads, and to carry any end thrust by a separate thrust bearing, two forms of which are illustrated in figure 9. In order to compensate for inaccuracies of machining this type of bearing is generally provided with a spherical seat, as shown in the sketches, which permits it to take its own position at right angles to the line of its load. The combination of annular and end thrust bearings is almost invariably employed with bevel gears.

The practical advantages of using ball bearings of no measurable wear does not stop with the simple saving of friction. Even more important on some accounts is the saving of wear over the ordinary plain bearings. Ball bearings properly designed never need to be replaced or "scraped in" and refitted like plain bearings, and all the expensive work of refitting, with the incidental taking down and assembling and adjusting, to which plain bearings must be subjected at least once a year, can be saved by the use of ball bearings. Of course there are other things to wear out, such as the clutch, gears, valve gear, steering gear, etc., but it seems hardly too much to say that 50 per cent at least of expense of the annual overhauling is dispensed with by the free use of ball bearings in many parts.

ITALIAN INDUSTRY FACTS

Washington, D. C., April 14—It appears that most of the Italian motor factories, having tried the machinery of other countries, have come to the United States for almost their entire outfit. The Italians do not manufacture from the raw material, but buy the rough parts in the open markets of the world. In July, 1905, there were in Italy fifty-one factories, with a total capitalization of $15,000,000, engaged in the making of the chassis alone, and not including the carriage works, tire makers, etc. In January, 1906, the number of factories had increased to 100, with a capital of about $100,000,000. The rapid development of the whole trade is evidenced by the estimate that in the last 5 years, ending with 1906, importations of cars, in number, increased 503 per cent, and the value of the importations 1,100 per cent, while Italian exports increased in number 7,600 per cent, and in value 17,816 per cent. It is estimated that the number of cars imported in 1906 was 800, valued at $2,000,000, while the number exported was 700, with a value of $1,750,000. Probably the motor car industry in Italy will be among the first to be affected by changing conditions of living and of wage. The Italian government, with the intention of relieving the increasing tension between low wage scale and rapidly enhansing cost of living, has caused the department of labor to go deeply into the question of day pay in sundry industries. It found that the wages paid workmen in motor car factories, per hour, are as follows: Mounting motors, 8 to 10 cents; mounting carriages, 6 to 8 cents; modelers, 10 cents; adjusters, 6 to 7 cents; finishers, 7 to 8 cents; coppersmiths, 7 to 8 cents; blacksmiths, 8 to 9 cents; electricians, 7 cents; helpers, 4 to 6 cents. Apprentices receive from 1 to 3 cents an hour in all factories.



BALL BEARINGS—FIGURE 9

THE READERS' CLEARING HOUSE

TYPES OF FRONT AXLES

London, England—Editor Motor Age—In view of recent accidents caused by either breakage of motor car axles, or the axle being broken by the upset, as there appears to be a difference of opinion among motor car manufacturers as to the various types of front axles, whether they should be of the I-beam or tubular type, I had the matter gone into carefully and scientifically and the report is as follows: Regarding the axle simply as a beam supported at its ends and loaded at the spring seatings, it is clear the section most suitable for beams and joists would be equally suitable for use on an axle; the section generally accepted is undoubtedly the joist or I section, while it would be quite unusual to use a tube as a beam in general engineering. With a tubular axle it is necessary to braze the tube into a stamping forming the end. This stamping is subjected to a severe stress, which tends to bend it up at the spring seat and wrench the tube from its socket, and for this reason alone it is obvious that a solid forged axle must be a great deal stronger than the tubular form. In this connection I might mention that the Kirkstall Forge Co., of Leeds, probably the oldest iron works in England, which supplied the axletrees to the war office during the South African war, says that, weight for weight, the tubular axle has only one-third the strength of the solid forged axle. In the case of the tubular axle the tube is originally straight and requires in most cases to be bent or set to give clearance. The tube must be bent very carefully to insure that it does not develop cracks and it must also be carefully annealed to insure that it has not become brittle. As regards strength, the six-cylinder Napier axle is capable of supporting seventy-six average men on the spring seats without difficulty. The actual load the axle is called upon to carry in the car is only equivalent to fourteen of the above men, so that the enormous reserve of strength in this important part of the car equals the weight of sixty-two average-sized men.—S. F. Edge.

SPEED OF A CAR

Cleveland, O.—Editor Motor Age—Will you kindly give me a little information through the columns of the Readers' Clearing House regarding the horsepower of a motor car I am about to purchase? What I wish to know is, what is the normal horsepower at say 900 revolutions per minute; also maximum horsepower, the full speed of the motor being about 1,600 revolutions per minute. Also please state about what speed a car could make on an ordinarily good road. The following specifications will give data on which answers to the above may be based: Runabout body, weight of entire car 1,300 pounds, wheelbase 80 inches, tires 28 by 3 inches, tread 56 inches, double opposed four-cycle water-cooled motor, 4¼-inch bore by 4½-inch stroke, valves mechanically operated, jump spark ignition, car is single chain driven by heavy Brampton type and is geared about 4 to 1; springs and axles are extra heavy. I wish to have a light tonneau made for this car, making a light touring car. Would you deem it advisable?—A Subscriber.

Normal power about 10 horsepower at 900 revolutions per minute. At 1,600 revolutions per minute anything up to about 15 horsepower, depending on design, especially on valves and piping. This motor should be able to drive the present car 30 to 35 miles per hour, provided its power does not fall off below 1,500 or 1,600 revolutions per minute. With the tonneau added the speed might be 28 to 30 miles.

HEATING A GARAGE

Vancouver, B. C.—Editor Motor Age—My garage, measuring 14 by 20 feet, is built of hollow cement blocks with shingle roof. Will you please advise me as to the best and safest method of heating. We seldom experience very severe weather here, but occasionally the thermometer approaches zero for 2 or 3 days in an exceptional winter. My car is driven by a gasoline motor.—Vancouver.

The ideal heating scheme would be hot water or steam connected to the heating plant in the house. A stove of any sort would carry with it the element of danger and would raise the insurance rates. If close enough to the house perhaps heat from a hot air furnace could be transmitted to the garage. An architect on the ground could solve the question easily.

BELTS ON MOTOR CYCLES

Buffalo, N. Y.—Editor Motor Age—Kindly answer through the columns of the Readers' Clearing House the following: Is there not a way of protecting the belts on motor cycles—flat belts—from cracking or cannot waterproof belts be bought? Cannot the belt be held together by bolts or some other means without loss of power, so that if anything disables the engine the belt can be taken off on the road and permit a free wheel? Will belt drive put a strain on or pull the rear tire loose?—V. L. W.

1—Use neatsfoot oil or fish oil. 2—This depends on the shape of the belt. There are various metallic fasteners used with flat belts, but none of them, so far as known, is detachable. Most belt-driven motor cycles tighten the belt by an idler, which can be slackened to take off the belt. 3—No; the belt will slip under such conditions as are named.

WIRING AND DRY BATTERIES

Auburn, Neb.—Editor Motor Age—If it is in order I would like to have you tell me if it makes any difference how the battery is wired to the engine. My car is wired as follows: The stationary end of the switch runs to the frame for the ground, the connecting point of the switch to the negative pole of the battery, the positive pole of the battery to the primary of the induction coil, the other end of the primary to the timer, and the secondary to the spark plug. Some people tell me this should be reversed—that this form of wiring will burn out the trembler. Is this correct? Why does a dry battery run out? Is it from polarization, drying out or the corroding or eating through the zinc? Can it be economically renewed in any way?—G. B. Beveridge.

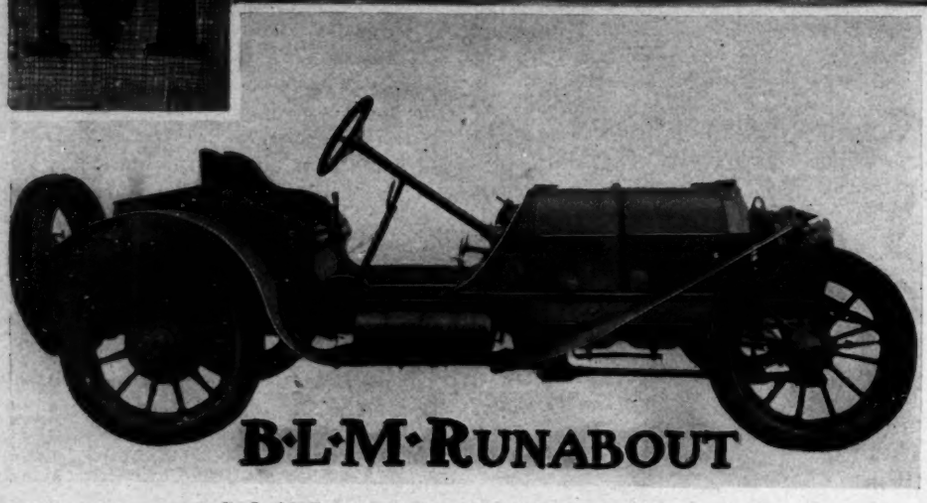
The diagram sent is correct. It does no harm, however, to reverse the terminals of the battery occasionally to equalize the burning of the platinum points of the trembler. If the terminals are not reversed, it is better to have the primary current pass from the contact screw to the trembler. Under this condition the contact screw, which is the easiest to clean and renew, is the one which gets the most of the burning. You can determine which binding post of the coil connects with the contact screw by slipping a piece of paper between the screw and the trembler, and touching a wire from one battery pole to the screw and one from the other battery pole to the binding posts in turn. A dry battery gives out in service from polarization and exhaustion of the chemicals. If unused the water gradually dries out of the blotting paper which separates the zinc and carbon elements. Such a dried-out cell can be freshened by drilling holes in the pitch with which it is sealed and soaking it in water. The zinc is corroded, of course, by the chemical action, but is seldom or never eaten clear through.

BECOMING A DRIVER

Oxford, Ind.—Editor Motor Age—Will you please inform me through the columns of the Readers' Clearing House the best and quickest way to become a good driver and repair man? I have had one season's experience with a single-cylinder Cadillac and have read a good deal about motor cars. Do you think I could get fair wages, with a chance to work up, in a garage or would it be a better plan to go to some good school for a while?—D. K.

A term of instruction in a motor car school would give a pretty fair technical knowledge of the motor car; a few months in a repair shop, with an occasional chance to drive a car in testing, would be the most satisfactory course to pursue.

MOTOR CAR DEVELOPMENT



B. L. M. Runabout with Miniature Racing Body

THE B. L. M. roadster is essentially a town car, designed for that fastidious class of purchasers who wish a fast flexible car to go from home to the office and back, one of those speedsters that can make the trip faster than the suburban steam lines, the subway trains or the elevated roads and a car not cumbersome like the large touring vehicle landaulet or limousine. In achieving such a car the B. L. M. Motor Car Co., 31 Delevan street, Brooklyn, N. Y., has singled out what it considers the important requisites of such a machine, namely, light weight, speed and exceptional liveliness—by the last is meant that feature in a car of picking up speed very rapidly when starting and stopping with equal celerity. The quest for light weight led to the continental workshops where the recognized foreign grades of chrome nickel steel were obtained for axles, steering knuckles, steering gear, transmission shafts and gears and frame. Searching for strong metals, with light weight, impressed the maker with the fact that a poor metal weighs as much as a good one, an aphorism which undoubtedly led to so general a use of chrome nickel steel as well as to the cutting off of every pound of useless metal from this part of the car and useless ounces off every other part of it. So great in fact was the effort of the designers and maker in the weight-reducing scale that it can be looked upon as the crux to the complete situation. Continued efforts along this line have produced a car that tips the beams at 1,350 pounds with gasoline and water tanks empty. A few steps out of the ordinary in the reduction of weight is the using of hollow shafts in the transmission set, reducing the motor crankbox to the minimum and adding a miniature racing body in place of that prescribed by the goddess of motoring fashion. The motor is hung 21 inches in rear of the front axle and the seats are 12 inches ahead of the back axle.

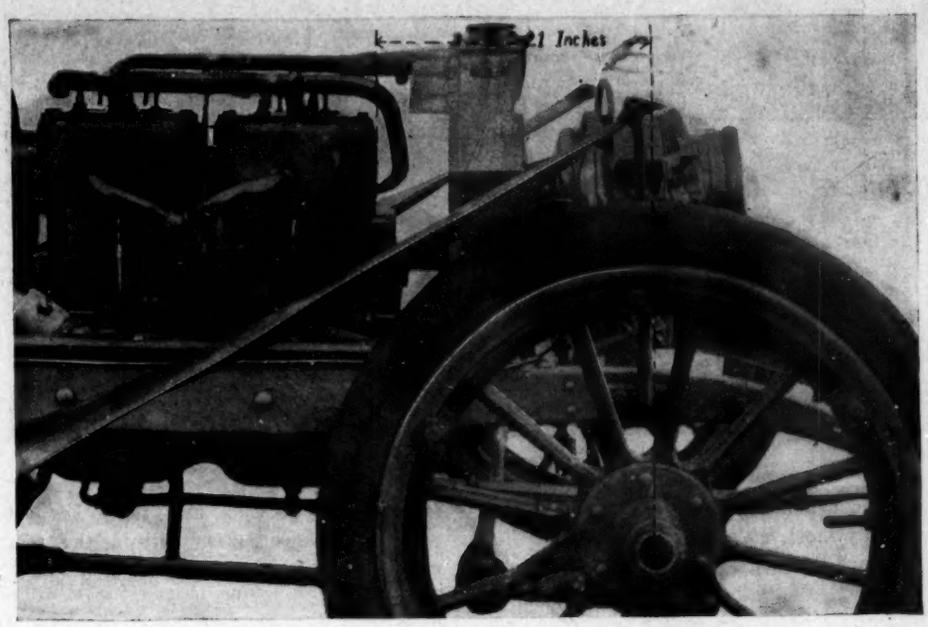
In the manufacture of a speedy car for around-town and interurban use the general adoption of Hess-Bright bearings was deemed imperative because of their antifriction qualities. In pursuance of this idea they are used for front road wheels, transmission set and rear axle design. The further achievement of speed resulted in the adoption, intact, of a French 24-horsepower motor from the factory of Mutel et Cie., Paris, which motor is looked to also to give the third essential, liveliness. To make the car well suited for city use the tread is 50 inches, 6 inches less than the American standard, which allows of a driver making much faster speed in crowded streets as he is enabled to slip through an opening that would not permit a 56-inch car to go through. Combined with these features are positive cone clutch and a double set of metal brakes.

The B. L. M. motor, or, as it should be termed, the Mutel motor, is a most conventional power plant of the four-cylinder class with cylinders cast in pairs and with waterjackets and valve chambers integral castings; the valve chambers disposed op-

Exhaust Side B. L. M. Motor, Showing Magneto, Water Pump and Oil Tank

positely, intakes to the right. The bore and stroke in metric measurements are 110 and 125 millimeters respectively which, translated, are 4⅜ and 5 inches. The crankbox is an aluminum housing made in two parts, the upper with lateral arms for carrying the motor on the frame side pieces as well as taking the crankshaft and camshaft bearings, the lower portion has its duties confined to those of carrying oil for a splash scheme of lubrication and is centrally divided by a cross partition preventing the uneven distribution of oil to the front pair or rear pair of cylinders. The two camshafts are not in the crankcase proper but repose in separate compartments in the sides of the case, these compartments covered by removable plates, thereby permitting of removing the shafts without disturbing the crankcase proper. Half-time gears at the forward end are not entirely enclosed but protected by a skeleton aluminum housing concealing the teeth of the gears. Intake and exhaust valves, composed of alloy steel, are made interchangeable, they are removable through screw caps in the tops of the chambers. In connection with the valves are standard lifter rods with roller ends for contacting with the cams.

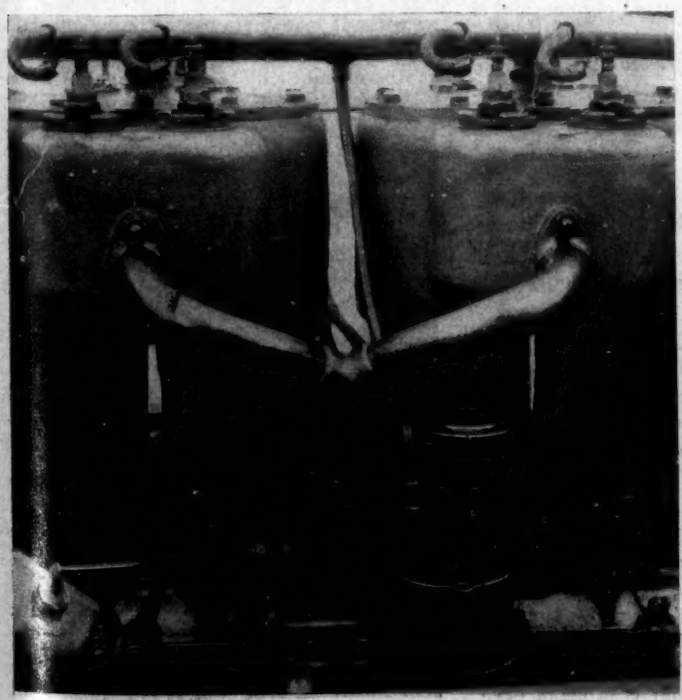
Following the fashion of such makers as Brasier and Renault, the spark adjustment is limited to two positions, a slow position for starting and an advanced fixed point for regular running. The lever governing this movement is on the left end of the dash, leaving the throttle control alone at a steering wheel member. In defense of the two-position theory on spark control is the argument that with increased motor speeds the voltage of the Eisemann magneto increases, resulting, according to the latest foreign arguments, in a slightly earlier spark. The magneto is carried on the left front of the motor and is gear-driven direct. Spark plugs are situated above the intake valves.



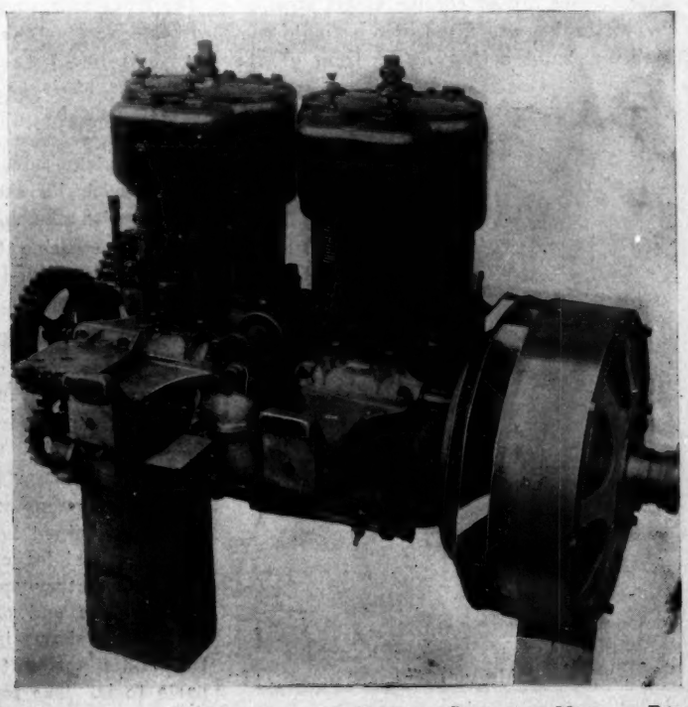
B. L. M. Car with Motor 21 Inches in Rear of Front Axle

Engine lubrication, as already mentioned, is by splash, with oil fed to the crankcase through a sight feed under pressure maintained by a gear pump. An oil tank located in the dash and kept warm by the heat of the motor sends the full pump capacity of oil to the crankcase when a valve on the dash is opened for that purpose. Other motor accessories include an automatic carbureter located on the right side, distributing through a Y pipe with the front and rear cylinder pairs. This carbureter has a separate float chamber, auxiliary air valve and steering wheel throttle control. Water circulation, provoked by a gear-driven pump, follows the prescribed course from base of radiator to the base of jackets beneath the exhaust valves and from the top of the jackets to the radiator top. Commendable in the system is the use of a large oval-shaped filling cap on the radiator, which cap, instead of screwing in place, is hinged and held shut by a toggle scheme.

The clutch is an inverted cone with the male part an aluminum spider faced with a thickness of cast iron instead of leather. This facing engages with a cast steel ring held in the flywheel rim, which ring is split on its diameter so it may be taken out without disturbing the gearset. The flywheel proper bolts to an integral flange on the crankshaft. Instead of using a fan for assisting in motor cooling aluminum



Intake Side with Carbureter



The B. L. M. Motor

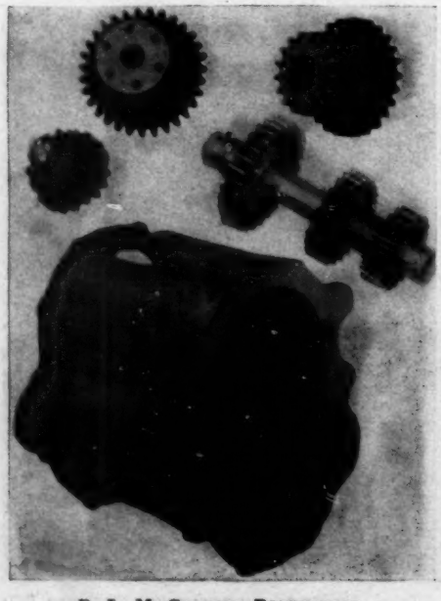
Exhaust Side with Magneto Bed

DASH DECORATIONS ON B. L. M. ROADSTER

blades are attached to the front side of the flywheel, as seen in one of the illustrations. Changes in speed are through a three-speed progressive gearset in which one sliding set of gears is used and in which the reverse gear is swung instead of slid into mesh. Gears and shafts are of chrome nickel steel, the latter bored hollow throughout their length. Countershaft gears are teeth rings bolted to integral flanges on the shaft; drive on the third speed is directly through opposing jaw couplings and Hess-Bright ball races carry both shafts. The gear box is an aluminoid housing of barrel shape with the ends open for the reception of end plates containing the bearings for both shafts. Communication with the back axle is through a two-jointed propeller shaft, the joints designed to slip slightly and held steady by stiff springs acting fore and aft. The rear axle is of the floating type with the wheels carried on the axle tubings or sleeves, leaving the chrome nickel drive shafts free of all strain except that needed in driving. The axle sleeves are of chrome nickel steel.

Two brakes are fitted, one a single contracting band acting on a drum at the rear of the gearbox and the other set expanding shoes acting within the rear wheel drums. The former brake, designated the running one, is a cast steel drum with cork inserts acted upon by a metal band, the tightening of which is by pedal and which action disengages the clutch. Emergency or rear wheel brakes are expanding bronze shoes acting within cast steel drums, they being actuated by a side lever, which member acts independently of the clutch. The rear brakes, contrary to custom, are not enclosed, the idea being that to act well they must be kept in proper shape. This can be better done with them exposed and readily accessible.

In the chassis frame cross pieces are made with integral gusset plates. The rear springs, long semi-elliptics, are supported on swiveled pads on the axle sleeves with bronze bushings containing graphite inserts for lubrication. From the brake spiders on the back axle distance rods swivel under these castings, allowing a slight side as well as vertical movement. The front axle, an imported chrome nickel I-beam forging, has its center drop in a straight line with a gradual incline from the ends of it to the steering knuckles. Steering is by worm and segment gear with parts formed of case hardened chrome nickel steel. The segment is integral with its shaft and the worm integral with the spindle which is brazed into the steering tube. The wheel base is 96 inches, tread 50 inches and wheels 32 by 3½ inches.



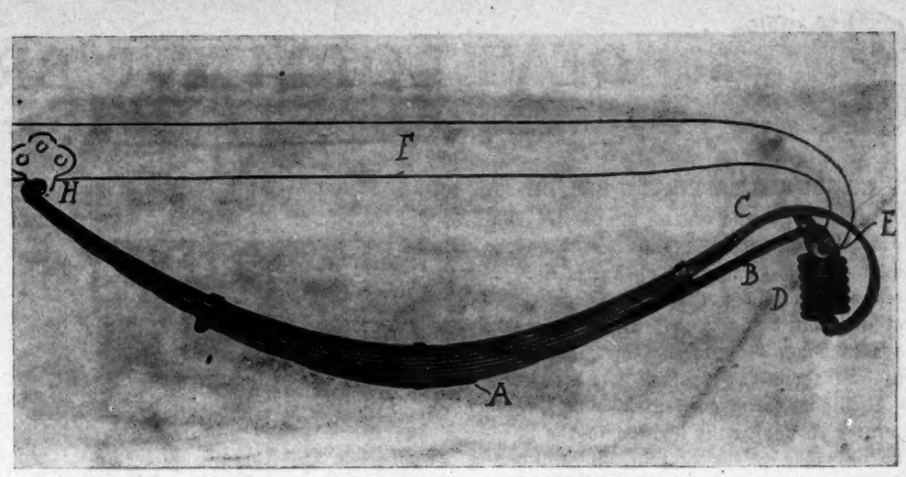
B. L. M. GEARSET DISSEMBLED

SPRING WITH TRIPLE ACTION

Many inventors are at present working along the line of spring improvement in hopes of eliminating the use of a shock absorber. With this end in view the Triple Action Spring Co., 1254 Michigan avenue, Chicago, has brought out a new spring, combined in which are a series of semi-elliptical leaves, a scroll ending and a supplementary spiral spring interposed between the end of the spring and the frame. As shown in the separate illustration of the spring, there are four essential parts to it. The top leaf C is made very long and at its rear end continues forming a downwardly curving semi-circular scroll and is attached to the bottom of the spiral D. The third bottom leaf B is made the second longest leaf of the spring and attaches at its end by shackle pin E to the top of the spiral D. Beneath the leaf B are two or three short leaves A and between it and the long top leaf C is the regular series of graded leaves held by clips to the long upper leaf. The spring attaches to the frame F by bolting directly at H at the forward end and shackling or otherwise at E, the spring attaching to the top of the spiral at bolt E. The long top leaf C is made of ⅜-inch stock, whereas the other leaves are $\frac{5}{16}$ inch. The spiral spring D is 3¾ inches long and of such strength that with the thumb and first finger it can be compressed ¼ inch. After it gets its first 1¼-inch compression a pressure of 600 pounds is needed to give a compression of ¼ inch more. When it is under a compression of 2 inches 1,200 pounds are needed to effect a further compression of ¼ inch. In action this spiral comes into use first, being ahead of the long top leaf C with its scroll ending or any of the semi-elliptic leaves. The scroll comes early into action and differs from all other attempts in using the scroll effect in that in action it opens instead of closing under load. The great advantage claimed for the spring is the securing of good suspension without too long a spring. The maker asserts that while many spring manufacturers have brought out springs 60 inches in length this suspension is effected by his combination in a spring scarcely 50 inches long, his tests going to show an increase in resiliency of close to one-third by the substituting of his spring of a certain length for a conventional spring. The claim is that this spring reduces the rebound and gives an easy carriage when the vehicle is traveling with or without load. Its use calls for the taking off of the old springs entirely, but it can be attached by the same shackle links.

RAMBLER DOUBLE-LID TOOL BOX

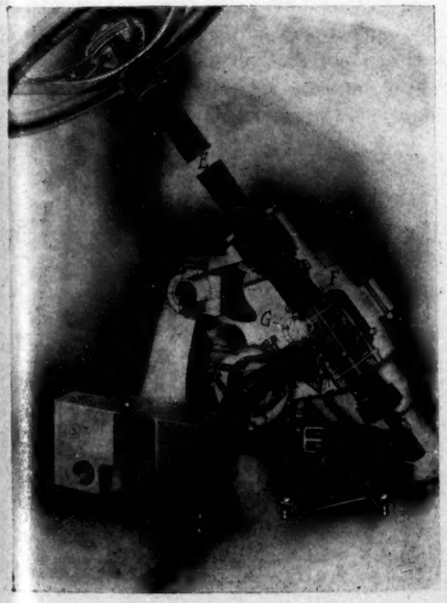
For those wishing the scroll end effect and the addition of the spiral a makeshift is used which permits of leaving the old spring in place and interposing a short scroll piece with spiral between the spring and the frame, much as the regular spiral is inserted, a task easily accomplished by one person in an hour's time. The triple action spring is the invention of D. R. Close, manager of the Garden City Spring Works, Chicago, and it is being handled solely by the Triple Action Spring Co. under the presidency of S. Furmidge.



TRIPLE ACTION SPRING ATTACHED

MARMON STEERING GEAR

The Nordyke & Marmon Co., Indianapolis, Ind., is using on its cars a unique style of adjustable roller bearing steering gear, which it exhibited throughout the recent motor car show circuit and which occasioned favorable comments from many engineers. The cast aluminum housing is made oiltight and dustproof and is filled with thin grease and oil. The steering column is mounted in Timken roller bearings, one B at the bottom of the aluminum case and one A at the top with the screw and nut between them. These bearings are adjustable with a single nut on top of the case. The steering arm C, a single piece forging, also is mounted in Timken roller bearings adjustable with a single nut, conveniently placed at one end at D and not seen at the further end. The column E carries a steel screw F working in a large bronze nut having a lining of hard babbit. Bronze pins G part of and extending on each side of the nut, carry slotted steel links, the lower ends of which are pin connected to the two arms of the yoke forging which is keyed to the steering arm. A wing segment in the center of the yoke forging works in a slot in the bronze nut, preventing the nut from turning and likewise relieving the links from twisting. Two set screws in the casing act as adjusting stops on the wing segment, thus regulating the extreme movement of the steering arm. With this arrangement the mechanism is held in alignment, making the operation of the steering wheel perfectly free and easy without the possibility of binding at any point. The absence of lost motion is noticeable and it can only occur by neglect in oiling or very long continued use, in which event the babbitted nut can be replaced. Though irreversible, the lever connections are so proportioned with the size and pitch of the screw that the steering is easy and responsive. The column has a brass tube casing which does not move with the wheel. The rods of the spark and throttle control extend down the center of the column having the two levers on the wheel and gear connected to two pin ratchet segments at the bottom of the case. A foot accelerator operates the throttle independent of the set of the throttle lever on the wheel. The steering wheel is built up of black walnut segments on the solid three-arm wheel casting, turned and highly polished in natural finish. Oil injected under the cap on the wheel lubricates all of the moving parts within the column. The column is so mounted on a single tubular cross member K secured to the body frame, that the slant to the column may be easily changed to suit the position preferred by the owner of the car.



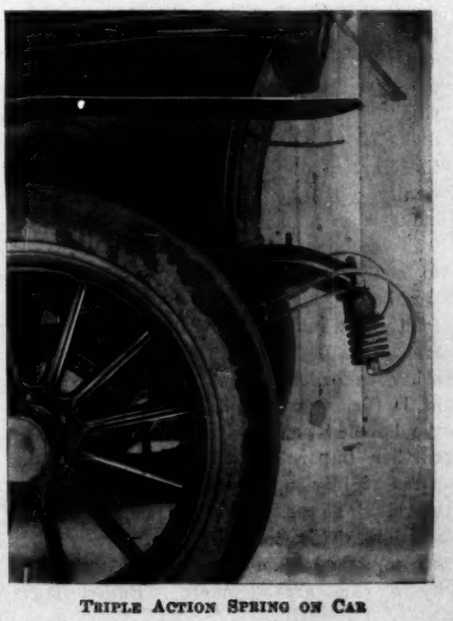
MARMON STEERING GEAR

TOOL BOX WITH DOUBLE TOP

Thomas B. Jeffery & Co., builders of Rambler cars, have added a new equipment to all of their cars in the line of a double-lid tool box which is carried on the running board of the cars. As seen in the illustration the tool box has two covers—the regulation one seen raised and a second or inner cover forming a shelf and carrying a set of four wrenches, two spark plugs and a socket wrench. The latch for holding the real cover in position is such that the top cover may be raised as shown, when access is obtained to the wrenches, plugs and socket wrench. Should the person desire entrance to the tool box proper then both covers may be swung up together as one. To prevent the wrenches and spark covers on the inner cover rattling a rubber lining is used. The design is the outcome of a suggestion proffered by a Rambler dealer who one day strayed into the company draughting room, where his eye espied a case with drawing instruments, it having a double cover as illustrated in the tool box. In the language of the dealer the new box "allows of the driver getting what he is after without 'digging' and eliminates that cyclone music so common with the single-top tool box."

HEALY LEATHER TREAD

The Healy Leather Tire Co. of New York has put on the market a new detachable tire grip which is made similar to the chain grips already in use, but instead of being made of metal tough chrome water-proof leather is used. The cross straps of this grip have steel rivets inserted in them. Each cross strap is connected to side straps by means of a simple device which allows of any part being replaced. Owing to the softness and pliability of this grip, it does not injure the tire in any way, it is claimed. It can be tightened on the tire by means of a strap and buckle, an operation requiring a few minutes' time.



TRIPLE ACTION SPRING ON CAR

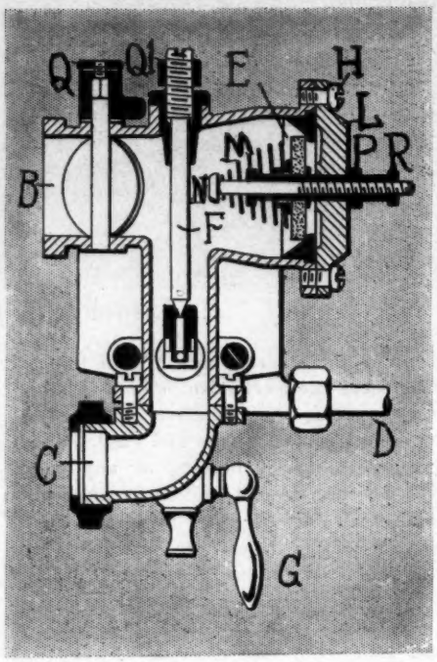
DEVELOPMENT BRIEFS

CARBURETER THAT'S SIMPLE

Undoubtedly one of the simplest carbureters in existence is that used by the Smith Auto Co., of Topeka, Kan. It uses a principle not new in carbureters yet one not made use of since the early days of surface devices. The entrance of gasoline from the fuel tank of the car is obedient to a concentric float which operates through a ball valve in the gasoline entrance G for shutting off and permitting the fuel flow. The top of the float is concaved, permitting it rising close to the concaved bottom of the mixing chamber Z so the gasoline level L in the float chamber nicely covers the bottom of mixing chamber Z surrounding the nozzle Y. Air entering through opening B in a downwardly direction strikes upon the surface of the gasoline. Mixing with it it rises and escapes past the throttle by way of an opening A to the motor.

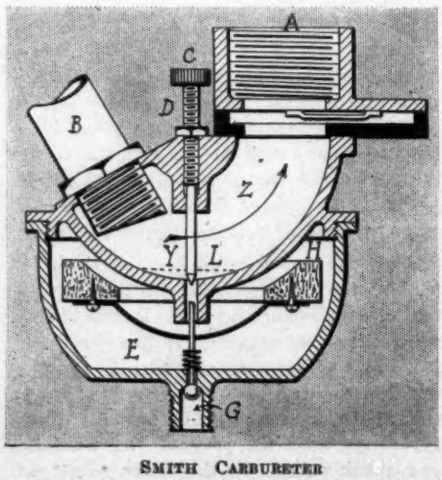
MANNING'S TRANSMISSION

As indicated in the plan drawing of the Manning double-friction transmission the shaft G is the rear end of the motor crankshaft, B is the mainshaft of the transmission and continues directly through universal joints to the rear axle differential, E and F are friction disks with coned peripheries where they contact with a third friction pulley D slidably keyed on the shaft G. C is the sliding friction wheel feathered to the shaft B and when contacting with the rear half of the surfaces of the friction disks E and F gives forward speeds; when moved forward past the centers of these disks gives reverse variations. The progression of power transmission in this gearset is as follows: The rotations of the crankshaft G are imparted to the beveled pulley D which transmits equally to friction disks E and F through their beveled peripheries and rotating in opposite directions. Contacting with the faces of these is the friction wheel C which is driven by both disks E and F in that the contacts for these are at points on the wheel C diametrically opposite. This imparts to C a movement in the same direction as E travels—oppositely to F. C being keyed to shaft B, the progression is direct to the back axle. It is essential that the friction wheel D be forced backward and disks E and F forced toward each other in order that the beveled surface of D forms positive friction contact with the beveled peripheries of E and F; it is further imperative that disks E and F press rigidly upon the periphery of the wheel C so as to insure positive transmission. This correlation of pressure is accomplished by a set of springs assisted by a cam arrangement. Pulley D is



American Carbureter

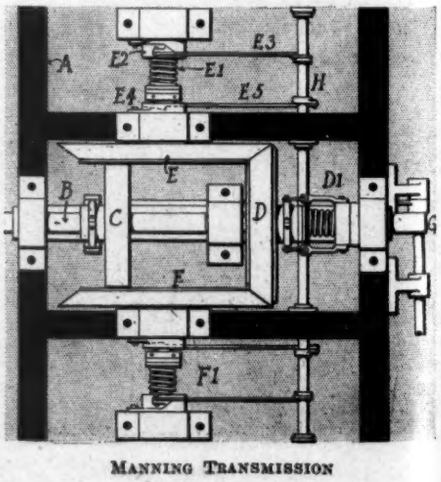
forced backward by spring D1, and disks E and F respectively forced toward each other by springs E1 and F1. Assisting in this thrust scheme and also used to counteract the spring is a cam combination illustrated in connection with the disk E but which is the same with reference to disk F and pulley D. Outside of the spring E1 is a cam E2 acting upon a cam face through the rod E3 connected to a cross rod H. Between the spring and disk E is another cam E4 acting upon a cam face through a rod E5 also connected to rod H. The cams for disk F and pulley D are connected with this same cross rod H. Operation of rod H engages or disengages these disks or wheels. It is manufactured by the E. H. Manning Transmission Co., Elkhart, Ind., which concern has experimented widely with it.



Smith Carbureter

AMERICAN CARBURETER

The American carbureter, a product of the American Carbureter Co., Detroit, Mich., is a conventional device throughout Before entering into detail on either of these specialties a cursory examination of the carbureter will enable a quicker and clearer understanding of them. An illustration is presented herewith, in which is clearly shown the gasoline entrance pipe D to the float chamber with its float, the exit passage B to the motor controlled by butterfly throttle, the needle valve F suspended from the top of the mixing chamber and adjustable therein and the auxiliary air intake valve E with its several parts. The float is adjustable to a thirty-second of an inch on its stem and controls gasoline entrance by a direct lift through a ball valve on the lower end of its stem. Immediately beneath this is a drip cock for draining off all gasoline. The interconnection between the butterfly throttle valve in the exit passage B and the needle valve F is at the top of the carbureter casing and between the parts Q and Q1. This connection is a slotted linkage allowing of a first adjustment so with a wide open or closed throttle the requisite gasoline flow is achieved. The maker claims with the higher speeds and greater call for additional gasoline the required amount is forthcoming, due to the part revolution given needle valve F at the time the throttle is opened. The auxiliary air valve E is supported in a bridge piece L secured to the carbureter casing by a pair of screws H, by the removal of which the valve can be detached intact. In adjusting this valve it is required to loosen the adjusting screw nut P. This done the tension of the valve spring M can be adjusted by unscrewing the nut R, turning the spring adjusting screw N and locking by the nut P, already referred to, and which insures permanent tension.



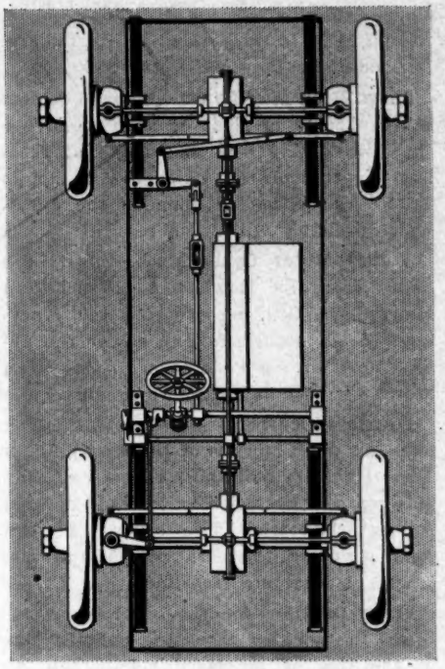
Manning Transmission

CURRENT MOTOR CAR PATENTS

Reversing Gear—No. 849,372, dated April 9; to P. Daimler, Unterturkheim, Germany—In this transmission set a double clutch is used. The forward male member A is secured to a solid shaft B and on which shaft is what appears to be a differential but is a gearing by which the two male portions of the cone are connected. The rear male portion C is on a sleeve loose on the driveshaft and carries a bevel gear D. The driveshaft also has keyed to it a bevel gear E and connecting these bevel gears is a pair of other bevels F and G. Should the forward clutch A be engaged then the drive is direct along the driveshaft B, but at this time because of the gearing, the rear clutch C would be revolving idly in the opposite direction. Engaging the rear clutch C the drive is through the bevel gears D, F, G and E to the driveshaft B and at which time this shaft with the forward male portion A of the clutch is revolved in the opposite direction.

Tire Protector—No. 849,438, dated April 9; to E. I. Tennant, Springfield, O.—Comprising this tire protector is an elastic band covering the tread of the tire. Attached to the outer surface of this is a fabric band which crosses from side to side forming alternate loops B through which passes an endless ring with turnbuckle C for holding the protector in place. Secured to the elastic band and to the fabric is a series of fabric strips which fill all the spaces between the angling bands and a series of metallic plates A which are used.

Resilient Rim—No. 850,000, dated April 9; to J. P. Holder, New York—Combined in this patent is a two-rim wheel, the inner rim attached to the end of the spokes and the outer rim of larger diameter carrying the tire. Separated between the rims is a series of short half-elliptic springs which at their centers are coupled directly to the inner rim but at their ends have a pivotal connection with swinging brackets to the outer rim. Between the ends of each half-elliptic springs is a coil spring hooked to each end of the semi-elliptic and intended to assist the semi-elliptic in the absorption of shock.



FOUR-WHEEL DRIVE DESIGN

Gaeth Carbureter—No. 849,538, dated April 9; to P. Gaeth, Cleveland, O.—This carbureter is of standard form and of the separate float chamber type. The features about it are: The gasoline exits from the spraying nozzle through a pair of horizontal openings located diametrically opposite in the standpipe and the regulation of the gasoline out of these is controlled by an adjustable needle valve. The normal air entrance is through a pipe located beneath the mixing chamber, but a portion of the air is regulated by a series of openings in the bottom of the cylindrical throttle valve which forms the chamber surrounding the spraying nozzle. Whenever this throttle valve is opened to give free passage to the motor, the control of these air openings is also varied.

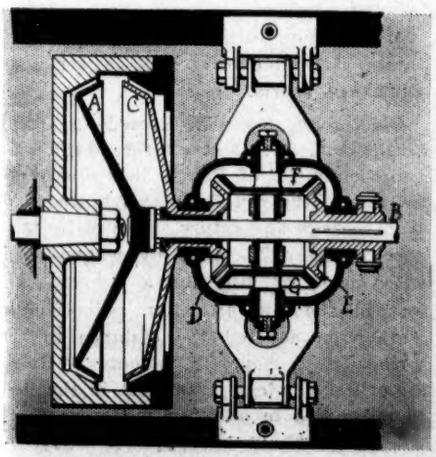
Tire Tread—No. 849,729, dated April 9; to W. Dunbar, Akron, O.—This patent relates to the tread portion of an ordinary clincher tire casing which has this particular part furnished with a series of circular pockets or recesses which are filled with rubber plugs of a resilient nature, the tops of these plugs being curved to harmonize with the curvature of the tire tread. The aim of the device is that plugs being of material of a different resilience from that of the casing proper the compression of the two varies produces an irregular surface which prevents slipping and correspondingly increases the adhesion.

Four-Wheel Drive—No. 849,483, dated April 9; to M. H. Magie and C. N. Winters, Bakersfield, Cal.—This patent relates to a motor vehicle in which all four wheels are driven by means of driveshaft to front and rear axle where it connects with differentials with the driveshafts of these axles. A universal joint system is employed in connection with the steering knuckles and driveshaft of each wheel so that they can be used for steering as well as driving the car, the operation of all four being through one steering wheel.

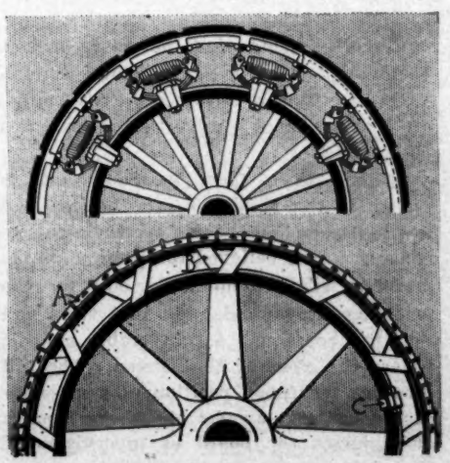
Spring Tire—No. 849,592, dated April 9; to S. Basch and R. Basch, London, England—Resiliency is accomplished in this wheel by a double rim with the intervening space between the two occupied by a series of semi-elliptic springs secured at their centers to the inner rim and at their ends shackled to brackets on the inside of the outer rim.

Anti-Skids—No. 849,805, dated April 9; to E. Nye and A. Gruesbeck, Charlotte, Mich.—These anti-skidding attachments consist of a series of cross links distributed regularly over the tread of the tire and held in place thereon by connecting links with turnbuckles. Each cross link is a semi-circular piece adapted to the curve of the tire and having flattened end flanges, the curved portion has an upright projection which grips the surface of the ground.

Supplementary Spiral Spring—No. 849,109, dated April 2; to G. Rotman, New Haven, Conn.—The ends of the full elliptical spring are separated by a set of two spiral springs. These spirals are supported between upper and lower plates, the upper plate shackled to the lower half of the spring and the lower plate to the upper half by means of a system of yokes and rods.



DAIMLER'S REVERSE GEAR



HOLDER'S RIM AND TENNANT'S PROTECTOR

FROM THE FOUR WINDS

Paying the Penalty—Motor cars have been barred from the two driveways leading across the Kansas state house grounds because of alleged scorching.

Fire in Chicago—The establishment of Dominick & Co., 542-44 Wabash avenue, Chicago, used as a repair shop and where parts were made, was damaged by fire the night of April 10, three touring cars being among the losses.

Win Their Point—Following a protest by motorists against the high toll charged on the viaduct connecting Kansas City, Mo., and Kansas City, Kan., a cut of about 40 per cent has been announced by officials of the company and a further cut for round-trip tickets.

Maryland Joins A. A. A.—Maryland has joined the American Automobile Association with the Automobile Club of Maryland, the Automobile Club of Hagerstown and the Automobile Club of Roland Park as members. The new organization is the seventh state organization to become a member of the A. A. A.

Too Many British Shows—J. W. L. Icks, prominent in British motoring, is crying out at the number of shows the British maker is forced to support. He points out that thirteen shows, exclusive of Olympia, are held in 14 weeks, entailing an expense of $210,370 spent by the trade without, he claims, any tangible results. He favors the Society of Motor Manufacturers limiting the shows to one in London, one Scotch affair and an Irish exhibition.

Federation Joins the A. A. A.—The Pennsylvania Motor Federation has become affiliated with the American Automobile Association, adding about 1,300 members to the national organization. This was done at the annual meeting and at the same time the old officers of the federation were reëlected, the slate comprising the following: Isaac Starr, Philadelphia, president; R. P. Hooper, Philadelphia, first vice-president; F. R. Slifer, Milton, Pa., second vice-president; Paul C. Wolff, Pittsburg, secretary-treasurer.

Stunt by Mudlark—Completing its 1,000-mile non-motor stop run in 71 hours and 44 minutes, the Oldsmobile Mudlark, which had been circumnavigating the oozy roads of suburban Philadelphia, beginning Saturday, April 6, at 9 a. m., continued right ahead, without stopping the engine for an additional thousand miles, and completed the second stage of its journey at 7:39 p. m. Thursday—a total of 130 hours and 39 minutes. Then the engine was stopped, and to show that there was still plenty of go in the Lark's engine T. W. Berger started it five times in succession on compression. Beginning Sunday morning the Mudlark, accompanied by a 60-horsepower Stearns, started on a 10 days' tour of Pennsylvania, the itinerary for which includes stops at Scranton, Wilkes-Barre, Easton, Allentown, Bethlehem, Harrisburg, Lancaster, Reading and Pottsville.

Show Week May Be Off—Chicago dealers have repented of their decision to have a show week May 6-13 and thirty of them have petitioned the Chicago Automobile Trade Association to abandon the event, which probably will be done.

Wants Motor Cycle Meet—Efforts are being made by Howard A. French and Howard W. Gill, representing the Maryland Motor Association, to secure the annual meet of the Federation of American Motor Cyclists in Baltimore in July.

Hoosiers Co-Operate—Efforts are being made by the motorists of Indianapolis and Terre Haute to build a clubhouse half way between the two cities which could be used by motorists from both cities. A good road connects the two places and the scheme is considered feasible.

Mack In—The American Car Manufacturers' Association is continuing its strides in the line of increased membership as shown by the announcement this week that the Mack Brothers Motor Car Co., of Allentown, Pa., applied for admission and has been elected. Two other applications are now in the hands of the membership committee.

Would Buy Toll Roads—Motorists in Pennsylvania are highly gratified over the fact that on Tuesday night last, by unanimous consent, Representative Minehart, of Franklin county, introduced a resolution in the House to have the highway department ascertain the cost of purchasing and converting into state highways all turnpikes in the state on which tolls are now charged, a report to be made to the next legislature.

Church People Hold Parade—At Columbus, Ind., last week church people hit upon the novel idea of a motor parade as a means to advertise a religious revival meeting. Pastor S. Offut, of the Central Christian Church, of that city, arranged the parade and was so successful in making arrangements that he succeeded in borrowing every car in Columbus. Between twenty and thirty cars participated, all bearing banners advertising the series of meetings.

Option Road Law Passed—What is known as the McManus local option road law has passed the senate of the Iowa legislature. It is believed the passage of the measure will provide a remedy for the much agitated problem in that state and that the house will act favorably upon it before the close of the session. The bill provides that upon petition of a majority of the property owners along any 2 miles of highway, the board of supervisors of the county may order the desired improvement. The expenses will be met, one-third by the county, one-third by the township and one-third by the adjacent property owners.

Race for Amateurs—A race for gentlemen's roadsters driven by strict amateurs over the Vanderbilt course is said to be in course of promotion with a cup for a first prize.

Possible Entrants—If the proposed race for foreign stock touring cars is run two probable starters are 50-horsepower Isotta Fraschini cars, one to be driven by Al Poole, Tracy's former mechanic.

Will Join A. M. L.—At the last regular meeting of the Colorado Automobile Club it was voted to join the American Motor League. The club now has a membership of 325. It has increased fifty in the last month and is increasing daily since the clubhouse movement was inaugurated.

Massachusetts' Strength—The increase of motoring in Massachusetts is shown by the large number of registrations taken out in Boston weekly. The registration office is fairly swamped these days. Last week there were 224 cars registered. The total number of cars on the list up to that Saturday was 18,645.

Michiganders Have Good Idea—The Grand Rapids Automobile Club will have a clubhouse at Cascade Springs, Mich. J. R. Jackson and G. W. Hart have been appointed a committee to investigate the question as to whether or not motorists must pay toll. A plan is on foot to have the owners of Kalamazoo form a club and then to consolidate the two, with a clubhouse midway between the two cities.

Bay Staters' Plans Uncertain—The Bay State A. A., of Boston, has elected a race committee and in a few weeks something definite will be announced as to what the club proposes to do on Memorial day. For the past few years the club has held a race meet at Readville on that date. It is doubtful if it holds one this year. There was some talk of a 100-mile race but that, too, probably will not amount to anything. The club may hold a series of gymhkana sports.

Oldsmobile Gets a Record—E. Linn Mathewson, president of the Mathewson Automobile Co., of Denver, has broken all records in the run from Denver to Colorado Springs and return. The distance is approximately 76 miles by wagon road, with plenty of hills and a rise of 2,200 feet in the first 45 miles, going south. Mathewson covered the distance to the springs in 2 hours 11 minutes. Going there is a climb of 1,000 feet in the first 30 miles and in addition numerous short hill climbs as in the opposite direction. The up trip was covered in 2 hours 4

minutes. The run was made in an Oldsmobile runabout. The previous best time was 2 hours 22 minutes made a few weeks ago by Martin Fetcher in a Premier.

Feat by Sorel—A cable credits Sorel with driving a 60-horsepower de Dietrich across France from Paris to Nice, a distance of about 611 miles, in 16 hours 15 minutes.

Worcester Nominations—The Worcester Automobile Club, of Worcester, Mass., has nominated the following officers for election: President, J. P. Coughlin; vice-president, D. F. Gay; secretary, F. E. Frost; treasurer, W. N. Stark.

Ford Out of Cup Race—Coincident with the change in factories comes the announcement that, so far as the season of 1907 is concerned, the Ford people have abandoned the construction of any Vanderbilt racing cars. One will be turned out for the 1908 race, though.

Will Spend Road Money—Major Wilds P. Richardson, president of the Alaska road commission, has established headquarters in Seattle, Wash., and with a corps of men will begin active work on plans for the expenditure of $250,000 made available for road purposes at the last session of congress.

Would Open Cliff Drive—The matter of allowing motorists more than 1 day a week on the Cliff drive, a picturesque boulevard in Kansas City, now is in the hands of the city council. The park board passed a favorable resolution. At this time Wednesday is the only day on which motor cars may venture on the drive.

Oil for Roads—Heavy oil will be used in sprinkling city boulevards and county macadam roads in Missouri this summer. Last year light oil was used in Kansas City with success. This year the county, too, will experiment. The boulevards were treated with oil four times in 1906 and it never was necessary to sprinkle them with water. This alone was a considerable saving.

Platinum Falling—Motorists are interested in the news that the price of platinum has fallen $4 an ounce since the first of the year and now is at $34 an ounce. It is said the price will go still lower. The European financial situation is believed to be responsible for the decline, European holders of the metal who had pledged it as collateral being forced to put it on the market when the loans were called.

For a Trackless Trolley—Following out its announced purpose of operating a trackless trolley line in the city of Lawrence, Kan., where the state university is located and where there now are no street cars, the Lawrence Electric Transportation Co. has applied for and been granted a charter to conduct such an enterprise. The company is capitalized at $200,000. It already has secured a charter from the city of Lawrence to operate over two routes and is said to have applications pending for grants in other cities in the state. O. W. Murphy, of Lawrence, is president of the company.

Orioles in Line—Baltimore motorists will observe the national orphans' day of the American Automobile Association, June 12, by taking 500 orphans on sightseeing tours.

Same as Railroads—The Meredith bill to encourage the establishment of motor car railroads in Iowa has passed the house. The bill declares any railroad operated over any track other than steel or iron shall be known as an "automobile railway" and confers on such road the rights and privileges now enjoyed by other transportation lines in Iowa.

Targa on Sunday—Italy's classic, the Targa Florio, the first of the big races of the year, will be run Sunday over a 92-mile circuit in Sicily. Fifty-two cars are engaged, Italy having twenty-seven, France seventeen, Switzerland four, Germany two, and Belgium one. All the prominent foreign makes are represented and the best drivers of Europe are nominated. The French cars were shipped from Marseilles April 3, being sent to Sicily by boat. Cagno in an Itala won last year's race.

Hill for Quaker Climb—After a 6 weeks' search Chairman E. C. Johnson, of the Quaker City Motor Club has succeeded in finding a suitable course for the first annual hill climb of that organization, which is scheduled for Memorial day. It is known locally as Monk's hill, and is situated across the Schuylkill river from upper Manayunk, near Gladwyne station, on the Philadelphia and Reading railway's main line. The hill is a trifle over a mile long, with a dirt road, rather soft under ordinary conditions.

Engineers Meet Saturday—Motor engineers, appointed for the purpose by the American Automobile Association, will meet in Indianapolis on April 20 to draft rules for the fall race for stock touring cars, suggested by Edgar Apperson, of Kokomo, and H. O. Smith, of Indianapolis. The meeting was postponed from last Saturday. It is understood a request will be made to allow foreign cars to enter the endurance run and this question will no doubt be considered at the meeting. The meeting will be held at the Commercial Club.

Government Interested—The federal government is taking a very lively interest in the extensive movement now under way to enhance the popularity abroad of American built motor cars. This has been exemplified on numerous occasions during the past several months and the latest indication of it is the fact that the bureau of manufactures here has secured printed copies of the entry forms of the Scottish reliability trials for touring cars, together with the rules and regulations governing the trials. Entry blanks can be had from the bureau of manufactures, department of commerce and labor, by such manufacturers as desire to participate therein. Entries must be made on the prescribed forms not later than noon of May 14.

Will Rejoin A. A. A.—A formal return to A. A. A. allegiance is prophesied at the next meeting of the directors of the Long Island Automobile Club of Brooklyn.

Club in Mason City—Eighteen motorists of Mason City, Ia., met last week and organized the Mason City Automobile Club. The club will use its influence toward securing better streets in Mason City and in having the roads surrounding that city improved. F. E. Keeler is president and W. H. H thorn secretary and treasurer.

Will Defend Members—The Quaker City Motor Club, of Philadelphia, is out with an announcement it will defend those of its members who believe they have been unjustly arrested or fined for infraction of the speed laws or for alleged misuse of tags. G. Douglas Bartlett, chairman of the club's law committee, and his fellow committeemen will give their services free in this connection. Mr. Bartlett is a member of the A. A. A. legal committee.

Tougher Eyeball Expected—L. Beekman, a Toledo optician, is authority for the statement that motoring will undoubtedly have the effect of developing a much tougher eyeball than has existed in the past. He claims the air pressure against the eyeball is extremely irritating and that at present it is dangerous unless the eye is protected with goggles. But he still maintains that as the sport increases in popularity nature will tend to safeguard the danger by producing tougher and harder eyeball muscles.

New White Scheme—The White Co., of Cleveland, has made formal application to A. R. Pardington for a plot of ground adjacent to the Long Island motor parkway on which it will erect headquarters for the use of owners of White steamers and their guests. The structure is to be called the White House. The general plan of the headquarters will be that of an exclusive country club, with an immense garage as the central feature. The extent of the restaurant and sleeping accommodations to be provided will depend upon what hotel facilities there will be in the vicinity.

Boulevard for Course—The Atlantic City Automobile Association, which is seriously considering the advisability of transferring its annual speed contest next September to the meadow boulevard, says Ventnor beach was abandoned because of weather conditions. The meadow road is nearly 5 miles long, as level as a floor and amply wide. It always is in good condition, and would prove an ideal course for the purpose. It is understood in view of the popularity of these races there will be little difficulty in securing the consent of the authorities for the use of the road for the three afternoons that would be required to complete the program.

THE REALM OF THE COMMERCIAL CAR

ROTH'S TRUCK LOADED WITH 800 CINCINNATI HAMS

CINCINNATI, wits its hills, its pork and its beer, has wrecked several commercial wagon reputations. By this is not meant the undoing of a certain make of car and destroying its national standing, but rather cars of many different makes showing excellent performances in other cities have come to grief on the Cincinnati streets. The hills of the city are notoriously steep, yet many of the commercial car builders have sought the town, as well as Pittsburg and San Francisco, chiefly owing to the reputation it is possible to make in a place abounding in steep hills. A year or so ago electric machines held the Cincinnati field but since the more general introduction of gasoline vehicles these have suffered a little. Of the Cincinnati pioneers with electrics is the Charles Boldt Glass Co., dealer in and manufacturer of bottles and bottle supplies, which operates a large electric truck, shown herewith, loaded with empty bottle cases. The wagon, besides fitted with the usual underslung battery, has control through a vertical steering column with the controller at the left of the seat and brake pedals in the footboard. The truck carries a low, lattice-side body.

Second to the Boldt glass concern comes the John C. Roth Packing Co., with its 5-ton electric shown loaded with 800 hams, making a load of 11,200 pounds. In speaking of the service rendered by this machine the Roth company said: "We are operating two 5-ton electric trucks and it is common for them to carry 12,000 pounds several times a day. We have had them nearly 2 years and they certainly are in every respect superior to horses." The Roth trucks are of the canopy top style, supplied with a full equipment of drop side and tail curtains. Single rubber tires are in use on all four road wheels.

Also in Cincinnati service is an electric operating in the service of G. E. Markley & Co., wholesale foreign and domestic fruit commission merchants. This truck, seen loaded with barrels of fruit ready to leave the Markley headquarters, has had an experience similar to the other electrics and carries loads from 3 tons up. It is well suited for the fruit trade, the body being made suitable for either barrels or packages. The canopy top makes it a good all-weather machine, at the same time not interfering much with loading or unloading work.

REMODELLED LOCOMOBILE IN NEWSPAPER WORK

NEWSPAPER LOCOMOBILE

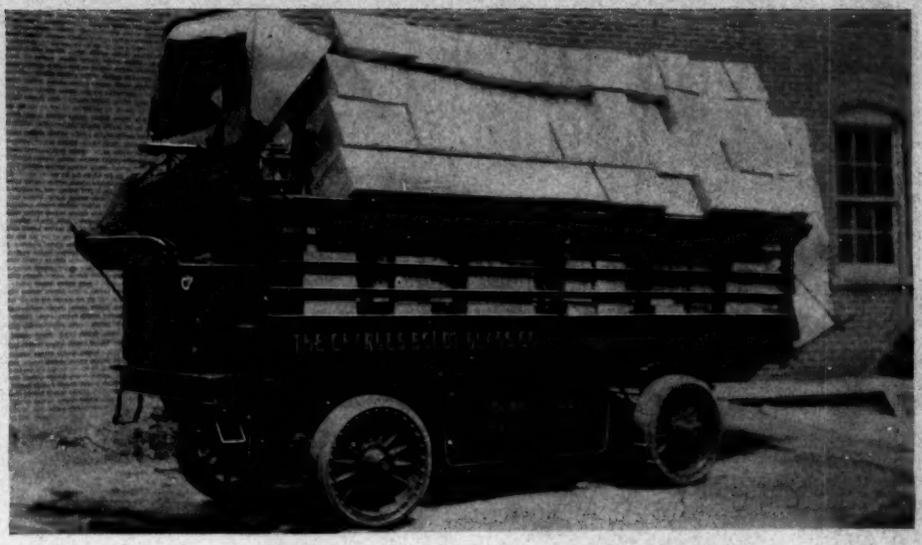
The Brooklyn Daily Eagle, one of the leading daily exponents of motoring in the east, which has for some time used motor cars for quick delivery of papers in the metropolitan area and also for the many members of its staff, has within the last 6 weeks added to its fleet of cars a remodeled Locomobile 22-horsepower machine of 1907 pattern. The chassis has not been altered but the I. S. Remsen Mfg. Co., a Brooklyn carriage building house, has worked many alterations in the body, prominent among which is the dispensing with the tonneau portion and fitting thereon a carrying compartment of ample measurements for the service. Pneumatic tires are used.

WILL DEVELOP TROPICS

"Queer transportation methods" was the subject of a lecture given before the National Geographic Society by O. P. Austin, chief of the bureau of statistics, department of commerce and labor. He declared that with the motor vehicle has come the dawning of an era of tropical development. "The horse has carried modern, occidental, industrial civilization on his back wherever it has gone," said Mr. Austin. "Where the horse could not live, there occidental civilization could not go. The railroad can be operated in any climate. But the horse is the railroad's feeder. Railroads in tropical countries cannot pay until means are provided of hauling freight over the dirt roads to them. Without the horse this has been impossible. But the motor vehicle solves the problem. It can work anywhere. It is actually working everywhere, hauling freight over deserts, through the plains of Thibet, the forests of India, the jungle roads of Ceylon and the East Indies. It is already recognized by the industrial world as the practical feeder of tropic railroads. In the deserts of New Mexico and Arizona motor vehicles are successfully carrying freight in a temperature of from 120 degrees to 140 degrees in the sun,

where owing to the extreme heat horses or mules can only be used at night. In Nevada motor trucks are now performing the work of thirty horses each, carrying freight over 100 miles of mountain roads. In California motor cars are carrying over dirt roads in the mountain regions as much ore at each trip as would require 100 pack horses for its transportation."

Mr. Austin went on to say that in South America the motor car is carrying passengers and freight to the inland cities over roads where only donkeys were utilized, and doing so at an enormous saving of time and expense. In Egypt the freight and passenger motor is beginning to take the place of the camel, some of them over long stretches of desert, and roads for their use are being constructed through the desert on which the products of that section will be brought to market. In India motor cars are being imported at the rate of nearly $2,000,000 worth per annum, and put in service on the country roads. In the Congo the Belgian government is constructing hundreds of miles of road for the use of the motor cars which are to be applied to the transportation of freight in that section. In Java an American car is now being used for the transportation of mails over the country roads of that island. In Japan the experiments with motor cars have been so successful that a company has recently been formed in that country with a capital of 10,000,000 yen, for the purpose of building and operating vehicles for a general transportation service in Tokyo and thence to surrounding towns. In the Philippines a line of motor cars is about to be put in service to carry passengers on certain country roads pending the completion of the railway. Mr. Austin expressed the belief that within a few decades the railroad and the motor freight car will together have opened the whole tropic world and made available the productive possibilities of the richest parts of the earth's great surface.



BOLDT'S 5-TON ELECTRIC LOADED WITH BOTTLE CASES

COMMERCIAL STEPPING STONES

Martin A Co., consulting commercial car specialists, of New York city, are arranging for the organization of a motor stage line between Lake Pleasant and Northville, N. Y. A sixteen-passenger car specially adapted for the roads of that district has been designed for the route.

The General Vehicle Co., Long Island City, N. Y., one of the big makers of electric commercial machines, will open a New York salesroom about May 1 at Broadway and Sixty-second street.

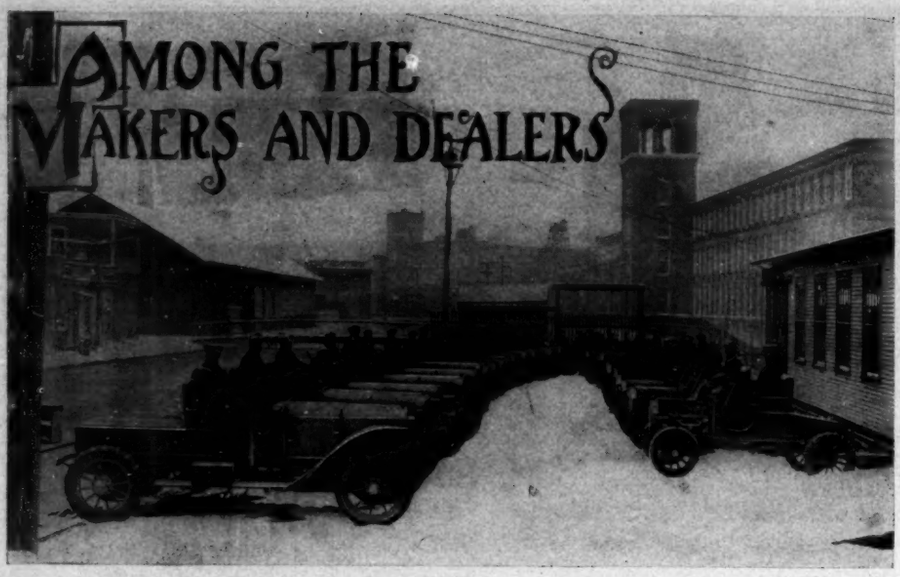
A new gasoline motor line, known as the Lake Erie and Youngstown railway, is to be run between Conneaut and Youngstown, O.

In a few days contracts will be let and ground broken for a three-story garage to be occupied by John M. Kuykendall, at present head of the Denver Omnibus and Cab Co., Denver, Col. The company is doing a big business with its sight-seeing machines. The new building will cost $40,000.

The Motor Carriage Co., recently incorporated with a capital stock of $1,000,000, is to place gasoline cabs on the streets of New York at a fee, which, it is expected, will make them popular. G. Winthrop Sands, who is the president of the company, has gone abroad to complete the arrangements for the purchase of 300 cabs. Negotiations have been going on for some time with the Chenard and Unic companies, of France, which make a specialty of these vehicles, and delivery will commence on August 1 and will continue at the rate of twenty-five or more a month until the order is filled. Walter Allen is the secretary and treasurer of the concern.

THE MARKLEY 5-TON ELECTRIC TRUCK IN CINCINNATI WHOLESALE FRUIT SERVICE

AMONG THE MAKERS AND DEALERS



STEVENS-DURYEA TESTERS WAITING TO START DAY'S WORK

John Not Out—George C. John is not out of the St. Louis Car Co. Fred Pardee becomes sales manager and Mr. John general representative.

Dragon Exhibiting—The Dragon Automobile Co. is exhibiting a car at the mining show now in progress in the Grand Central palace, New York city.

Lawrence Going Abroad—C. L. Lawrence, of the B. L. M. Motor Co., sails for Europe April 19 to visit Krupp's and other European institutions in the interests of the company.

Has an Exhibit House—A striking feature of the Babcock plant is the exhibit house which is unique in many respects. The house is built on the lines of a Pullman palace car, and one entire side is of French plate glass. In it is one of the company's model cars.

Will Make a Battery—The Syracuse Automobile Supply Co., 118-120 South State street, Syracuse, N. Y., will place on the market a non-corrosive lightweight battery for motor cars. The company has secured the services of George Bouton, formerly of the Syracuse Storage Battery Co.

Injunction Secured—Announcement is made by the Columbia Lubricants Co., of New York, that it has secured an injunction in the United States circuit court for the northern district of Ohio, restraining the Atlas Oil Co., of Cleveland, from the use of the word "Monogram" to designate certain lubricants sold by the latter concern.

Novel Advertising—The Al Fresco Amusement Co., which operates a park at Peoria, Ill., has purchased a model K-7 Gale which will be driven by a young woman who will be styled a $20,000 beauty and who will wear a different gown each afternoon and evening, it is announced. There is a drawing to be held at the end of the season, each patron being given a ticket and the winner gets the car and the young woman.

Goes with Rees—Robert J. Schmunk, formerly with the White company's New York branch, and manager of garages for that concern, has been appointed manager of the Rees company of New York.

Locomobile Prosperity—The Locomobile Co. of America reports it has shipped from the factory at Bridgeport over 60 per cent of the 1907 output and that its sales department never has been in such a healthy condition. The record shipment was made recently, $60,000 worth of Locomobiles leaving the factory in a single day.

Title for Duryea—Charles E. Duryea has been made consulting engineer for the American Motor Car Manufacturers' Association. Mr. Duryea began to make gas engines in 1886; started making motor cars in 1891 and was selling them in 1895. The Duryea wagon won the Times-Herald race in Chicago and the cosmopolitan race in New York. It was the Duryea wagon that won the first English event November 14, 1896, when it traveled 52 miles and defeated all the fast foreign cars by more than an hour. A few months later it finished second in the Belgian race.

Tyler with Babcock—C. H. Tyler, for 6 years eastern representative of the National Motor Vehicle Co., has joined the forces of the Babcock Electric Carriage Co., of Buffalo, N. Y., as salesman.

Trident in Philadelphia—The latest addition to Philadelphia's tire family is the Trident Tire Co., which has just opened salesrooms at 903 North Broad street for the exploitation of Trident tires and rims.

Will Continue Agency—The administrators of the estate of Frederick Randall, the agent in Boston for the Stevens-Duryea, and who died recently, will continue to conduct the agency until the business for the present season is at an end. Mr. Hildebrand is in charge of the office for the present, assisted by Simeon Baker.

Williams Out—H. A. Williams, 1459 E. 88th street, Cleveland, former manager and inventor of the Williams new electric car and new gasoline car, has severed his connections from the Williams Electric Vehicle Co. Mr. Williams expects to organize a new company or join some concern now in the carriage business, to manufacture his new electric car.

Schmidt Goes Abroad—Charles Schmidt, designer for the Peerless Motor Car Co., has sailed for Europe. Mr. Schmidt expects to be gone about 6 weeks and while in France will look after the Peerless interests in the making of contracts and the selection of materials to be used in the construction of the 1908 models. He will visit all the important European factories while he is away.

Will Build at Utica—The Eastern Machine Co. is the name of a concern just formed with offices in Boston for the manufacture of motor cars. It is capitalized at $300,000 and has a Maine charter. The company intends to build cars at Utica, N. Y., having purchased the Buckmobile gasoline engine and the Black Diamond company's good will. The company is to build a highpower runabout, touring car, light delivery wagon and a 2 ton delivery wagon. It also has patents covering steam engines and will build steamers if it is found advisable.

ADDITIONS TO MOTOR COLONY OF WASHINGTON, D. C.

Washington Additions—Since the first of the year there have been three notable additions to the motor car salesrooms in Washington, D. C. The buildings at 1313-1315 New York avenue were rebuilt for the Commercial Automobile and Supply Co., which handles the Wayne and Logan, and the Motor Car Co., agent for the Thomas, Peerless, Stevens-Duryea and Buick. Both buildings run through to H street and have entrances on both streets.

At the corner of Fourteenth and R streets, John A. Lutz, formerly of the National Automobile Co., has opened a salesroom for the sale of the Oldsmobile. The building is of the Spanish mission type.

To Hurry Orders—K. O. Chisholm has sailed for Europe to establish a Paris headquarters for Wyckoff, Church & Partridge to facilitate the shipment of C. G. V. cars and their delivery to the firm's customers desiring them for European tours.

Making Motor Car Steel—The Chicago Steel Foundry Co., with a plant at Nineteenth and Rockwell streets, Chicago, announces its crucible steel foundry has begun the manufacture of light high-grade steel castings especially adapted for motor car work. Early deliveries are promised, the company intending to make a feature of motor car work.

Goetz with Witherbee—Theodore Goetz, for years connected with the motor car lamp department of the R. E. Dietz Co., has joined the sales forces of the Witherbee Igniter Co.

Will Sell the Deere—The eastern selling agency for the Deere cars, manufactured by the Deere-Clarke Automobile Co., Moline, Ill., has been taken by the Zim-Rock Motor Car Co., of New York.

New Tire Concern—The Victor Auto Tire Repair Co. has been organized at Passaic, N. J., with a capital of $50,000. Its business is the recovering and vulcanizing of tires, repairing of rim cuts, and the making to order of inner tubes. It also manufactures the Victor inner tube, which is felt-faced and is claimed to be non-leakable. James Maitland is manager and Samuel W. Hall secretary.

Tire Deal Confirmed—E. Lamberjack & Co. write Motor Age confirming the report that a factory would be established in New Jersey where Michelin tires will be made by the same methods as are used in France and of the same material and workmanship. It also is announced that within a short time a small force of men will be put to work in the factory for the special purpose of making Michelin tires to be fitted to American cars in the Vanderbilt.

Will Move to Dalton—The Pittsfield Spark Coil Co. has decided to move its plant from Pittsfield, Mass., to Dalton, same state, and take the big factory building there left vacant by the Dalton Shoe Co. It is expected the new place will be running by July 1. At present the company employs about 116 hands. Announcement also is made that a half interest in the company has been secured by Zenas Crane and Senator W. M. Crane. The Pittsfield Spark Coil Co. was organized 3 years ago last month and has a capitalization of $20,000.

JOHN A. LUTZ'S SALESROOM IN WASHINGTON, D. C.

Sutphen Opens Garage—A new garage has been opened at 1626 Broadway, New York, as headquarters for the English Daimler by E. W. Sutphen, its importer.

Change in Norwich—Avery C. Smith, of Smith & Son, has sold his interest in the Norwich Automobile Station at Norwich, Conn., and has joined forces with A. C. Swan under the name of Baird & Swan.

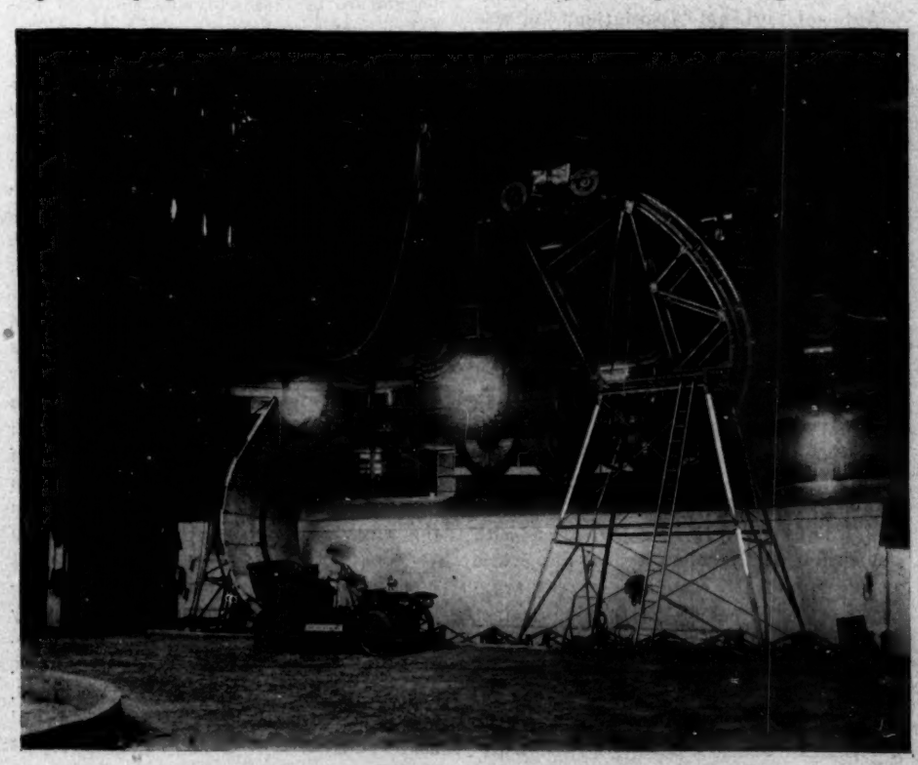
Lee in Justin's Place—John W. Lee, Jr., has succeeded A. F. Justin as manager of the Penn Automobile Supply Co., of Philadelphia. Lee formerly was connected with the Cadillac sales department of the Foss-Hughes Motor Car Co.

Climb Viaduct Hill—A. S. Robinson, of the Harry S. Houpt Co., of New York, recently took out a Thomas Flyer for a hill-climbing stunt and went up Viaduct hill, it is said, on the third speed, carrying seven people. The hill is about ⅛ mile long and half the distance is about 19 per cent grade and the rest of it about 15 per cent. On this same grade of victoria type of Babcock electric, it is claimed, went up, carrying two people, in 50 seconds. The batteries are said to have been only half charged at the time.

New Branch Manager—E. L. Thompson has just been appointed manager of the Post & Lester company's branch store at 821 Boylston street, Boston. Mr. Thompson formerly was with the Angier company. The new store is centrally located. The interior is handsomely finished in weathered oak. Besides handling a complete stock of supplies in New England the company has secured the exclusive selling agency for Boston and vicinity for Continental tires, Splitdorf coils and a number of other standard lines in the way of accessories.

Now a Berlieter—James K. Christie, who recently withdrew from the firm of Palmer & Christie, importers, has joined the forces of the American Locomotive Automobile Co., his position being designated as manager of city sales by the general manager of the company, James J. Joyce.

Patent to Maxim—Hiram P. Maxim, of the Electric Vehicle Co., has been granted a patent for an interchangeable motor vehicle running gear made in two distinct parts, one consisting of the steering mechanism and the other of the driving mechanism, a system of design in vogue among the manufacturers of electrics. Mr. Maxim applied for the patent in 1899 and it has taken 8 years to put it through.



HEROINE OF THE BARNUM & BAILEY DIP OF DEATH IN AMERICAN MORS

LEGAL LIGHTS AND SIDE LIGHTS

JOLT FOR CONSTABLES

The country constable, the man who has been the bane of the motorist in Massachusetts, got a rude jolt last week when notices were sent to every chief of police in the cities and towns in the state regarding arrests without a warrant for violation of the motor laws. About this time every year the village constable who on week days mows hay or chases cows changes his vocation on Sundays and donning a badge and a club is transferred into a representative of the majesty of the law. As such these men with cheap watches have taken their places in obscure places along the highway and dropped on the unsuspecting motorist. In many cases motorists have been brought to the station and there held to await bondsmen. An association has been formed in Boston to proceed against the country constables or any officers who make illegal arrests. The system is to be extended to other states in New England. The notice that has been sent to the chiefs of police in the Bay State read as follows: "A violation of the automobile laws of this state is only a misdemeanor, for which our statutes do not authorize an arrest without a warrant, and such arrest places the arresting officer in danger of a suit for damages. This is notice to you that any arrest of the members of this association for alleged violations of the automobile laws of our state, without a warrant, will not be tolerated, whether such member is a resident of this or some other state. —Automobile Legal Association, by William A. Thibodeau, counsel."

TERRY ON A. A. A. PROGRESS

Charles Thaddeus Terry, chairman of the A. A. A. legislative committee has reported progress to President Hotchkiss on the better motor conditions which prevail in New Jersey, Pennsylvania and Connecticut. Chairman Terry tells of the amendment to the Quaker law whereby visiting motorists do not have to take out a Pennsylvania tag and of how several obnoxious measures in New York were done away with. Most of his report, though is centered on the situation in New Jersey, particularly those sections relating to non-resident motorists and the use of tire chains. Said Chairman Terry: "In respect of the first of these two matters I have been in communication with the author of the present law, and while he recognized the soundness of the arguments which I submitted to him against the continuance of the oppressive limitations put upon non-residents, he insists that it is sufficient argument for the retention of the non-resident clauses in the bill that their effect is to add a considerable amount of money to the revenues of the state. I have said that this seems to me a very penny wise and pound foolish doctrine; that it is saving at the spout and losing at the bunghole, because of my own knowledge many people, who were formerly summer residents of New Jersey, will not go there at all with their motor cars because of the unfairness and harshness of the provision referred to, as well as to other provisions of the statute. The author of the present statute above referred to has introduced a bill for the amendment of the said statute in several particulars, and among others one which shows that he has so far modified his extreme views as to permit the commissioner of motor vehicles in his discretion, or rather upon conditions as may be imposed in his discretion, to issue short term or tourists' registrations for a period not exceeding 3 days, upon the payment of a fee of $1. I have been trying to point out to some of the lawmakers in New Jersey the unsoundness of the discrimination against non-residents and the violation which is caused thereby to well recognized principles of comity among the states. Eventually I hope that the author of the bill, or at least a sufficiently large number of the legislators to outvote him and his friends, may be persuaded by such arguments to adopt the views on comity which have been adopted in an overwhelming majority of the states of the union having motor vehicle laws." Taking up the measure introduced into the New Jersey legislature by Assemblyman Daab, of Hoboken, which forbids the use of tire chains, Mr. Terry remarked: "There is every reason why this measure should be adopted in amendment because it effectually protects the public and the motorists from harm and injury, making compulsory upon the owners of motor vehicles the use of some non-skidding device at a time when such vehicles have a dangerous tendency to get beyond control." On Connecticut legislation the A. A. A. man said: "There have been three bills introduced in the present session of the Connecticut legislature seeking to remodel the motor vehicle law of that state, and two of them making rather radical changes therein; particularly in respect of the taxation of these vehicles and burdens imposed upon non-residents. As the law at present on the statute books of Connecticut is in very many respects a model law, and as it was threatened by reason of the bills introduced as above suggested with very obnoxious changes, the matter was energetically taken in hand by Walter S. Schutz, a member of our legislative board, who drafted and had introduced a bill preserving the integrity of the present statute in most of its important aspects, and seeking to meet the demands of those who sought an entire renovation of the law by provisions which should be reasonable and sound, without bearing oppressively or unfairly upon the users of motor vehicles. In behalf of the American Automobile Association I presented to a committee arguments against the imposition of a special tax upon motor cars or motorists, pointing out the injustice and unconstitutionality of a discrimination between motorists and other users of the highways or between motor cars and other vehicles; also urging for the elimination of specific speed limitations on the ground that a provision, substantially in the following language, would be much more effective in securing conviction of reckless drivers and much more effective in restraining those inclined to disregard the rights of other users of the highway, to wit: 'No person shall operate a motor vehicle on the public highways of this state at a rate of speed greater than is reasonable and proper, having regard to the width, traffic and use of the highway, or so as to endanger property or the life or limb of any person.'"

TAKING KINKS OUT OF LAW

The questions arising under the new Indiana law have been settled in a satisfactory manner by Attorney General James Bingham, to whom the measure was referred by Secretary of State Fred Sims. Under his decision those holding registration certificates under the 1905 law must again register but need not pay a second fee. It is provided in the new law that numbers must be of greater height and a new system of numbering is also required. However, Attorney General Bingham says while owners must obtain new numbers, they need not make a second application or pay a second fee. On April 10 the new law became effective by a proclamation from Governor J. Frank Hanly. It is a revision of the 1905 law, containing several amendments. It is estimated that Indianapolis will lose about $2,400 from the new law. The annual fee for several years has been $3 a year, which now is eliminated. As a result bicycle owners and drivers of horse-drawn vehicles are complaining. Those who ride bicycles must still pay $1 a year, while horse-drawn vehicles will be compelled to bear license tags costing from $3 to $15, according to size and width of tires. The vehicle license ordinance long has been a profitable source of revenue for the city and has been applied on the street repairs and improvements. Now this will be lost but it is believed some other source of revenue for fixing the streets will be found by the city.

BRIEF BUSINESS ANNOUNCEMENTS

Pomona, Cal.—A new garage is in course of construction on Garey avenue for W. H. Davis.

Detroit, Mich.—The Milne Auto Start Co. has been incorporated with a capital stock of $30,000.

Huntsville, Ala.—The Huntsville Motor Car Co. is about to erect a new brick and concrete building.

Kansas City, Mo.—The Jackson Automobile Co. has quit business and given up its garage on West Ninth street.

Kansas City, Mo.—Carl J. Simons has succeeded Charles E. Cook as manager of the Palace Automobile Co., 1408 Walnut street.

Albany, N. Y.—The Buffalo Carbureter Co. has filed papers giving notice of the increase of its capital stock from $10,000 to $20,000.

Ottumwa, Ia.—Don P. McClure will open a garage here at Second and Green streets, the building being built of limestone blocks. It is 66 by 55 feet.

Springfield, O.—W. E. Barton, formerly manager for the King Mfg. and Garage Co., is now building tops under the firm title of the Barton Mfg. Co.

Boston, Mass.—The Concord Motor Car Co., agent for the Waltham-Orient and Boston electrics, has removed to its new establishment on Huntington avenue.

Terre Haute, Ind.—The Wabash Gear Co. has been organized and has signed a contract with the Commercial Club for the location of its plant in this city. The company is to manufacture motor specialties. H. L. Warner and R. M. Brown, of Muncie, are interested in the new project.

Kansas City, Mo.—A new garage has been opened by the Kaw Valley Automobile Co., agent for the Premier and the Mason, at 3130 Main street.

San Francisco, Cal.—A large garage has been opened by the D'Arcy, Scott Co. at 611 Valencia street, between Seventeenth and Eighteenth streets, and will be called the Mission garage.

Fargo, N. D.—The Fargo Automobile Brokerage and Garago Co., with a capital of $50,000, has located here. A. J. Gehm is president and E. H. Probstfield secretary, treasurer and manager.

Pittsburg, Pa.—The Allegheny Automobile Co. has removed to its new quarters at 915-919 Irwin avenue. The company has the agencies for the Austin and Glide cars and also for the Rapid truck.

New York—The Times Square Automobile Co., dealing in both new and second hand machines, has greatly enlarged its quarters, and now has the entrance to its building at 1599-1601 Broadway.

Philadelphia, Pa.—The new office and salesrooms of the Kelsey Motor Car Co., which handles the Maxwell and Mora at 204 North Broad street, Philadelphia, were thrown open to the public last week.

Newark, N. J.—A. T. Purcell, who has been acting as manager of the Dorris Co., of New Jersey, will be succeeded by George D. Ryall, the president of the concern, who will assume the duties of manager.

Springfield, Mass.—The Atlas Motor Car Co. has a contract with the Crane Automobile and Garage Co., of Providence, R. I., to represent the Atlas runabout in that section. The Crane company is building a $15,000 garage.

Akron, O.—Ground has been broken for the erection of two large additions to the plant of the Diamond Rubber Co. The new structures will add practically 4 acres to the floor space of the plant, and will be utilized principally for the extension of the motor tire department.

Springfield, Mass.—Theodore Geisel of this city has bought the Bemis property on Taylor street for $35,500. The property is one block from the railroad station and 100 feet from Main street. It is 127 feet deep, 144 feet on the rear line and 126 feet front and has a 20 foot passage way on each side. Plans have been completed for a fire proof garage to be built immediately on one corner, 55 feet front and 127 feet deep. The roof is entirely suspended by trusses without a post in the entire building. Later on the garage will be extended over the entire property. The place will be occupied by the Geisel Automobile Co.

New York—Plans have been filed with the building department for rebuilding the two-story stable at 130-132 West Eighteenth street into a garage. C. F. Jerome is the owner.

Trenton, N. J.—The Sea Shore Garage Co., of Norwood and Brighton avenues, Deal, has been incorporated with a capital stock of $25,000, and will conduct a general garage business.

Boston, Mass.—The Defiance Chain Co. has been incorporated with a capital stock of $10,000, and will manufacture motor cars. The incorporators are G. H. Burg, D. W. Dunn and H. B. Lent.

Cincinnati, O.—John A. Payne is to go into the motor business. He has recently become a member of the syndicate formed to manufacture motor cars in Paris, and will represent the car in this city.

Kansas City, Mo.—The Buick Automobile Co. has moved to 1108 East Fifteenth street and the Central Livery Co. has moved to the old Buick quarters at 1318 East Fifteenth street.

New York—A new garage and machine shop is to be opened at Sixty-second street, between Broadway and Columbus avenue. It will be known as the Rees garage. The garage has a capacity of 250 cars. E. C. Converse, O. H. Culter, H. L. Doherty and about twenty-one others are interested in the new project.

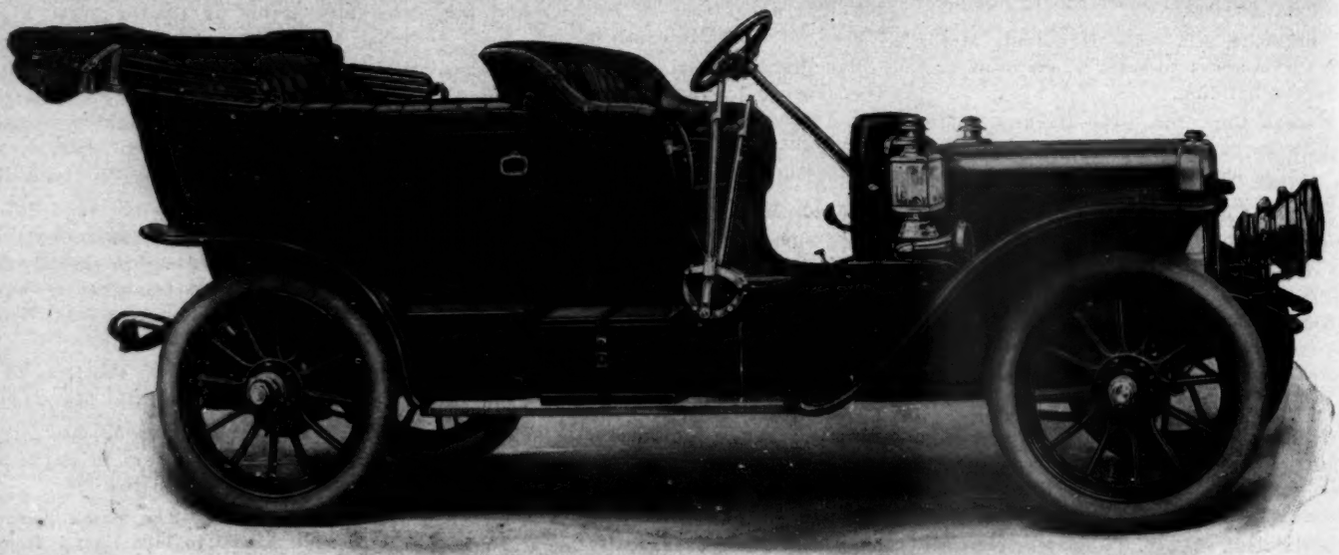
NEW AGENCIES

Sacramento, Cal.—Western Motor Car Co., Jewel.
Sheridan, Wyo.—J. Frank Heald, Jewel.
Washington, D. C.—Jewel Automobile Co., Jewel.
Wilkes Barre, Pa.—Pennsylvania Armature Works, Ford.
Seattle, Wash.—C. W. Poole, Cleveland.
St. Louis, Mo.—Van Automobile Co., Cleveland.
Providence, R. I.—Crane Automobile and Garage Co., Atlas runabout.
Columbus, O.—H. C. Crum, Jackson.
Cleveland, O.—W. B. Davis, Jewel.
Akron, O.—L. M. Latta, Jewel.
Canton, O.—W. H. Burgener, Jewel.
Newark, O.—Charles Mills, Jewel.
Columbus, O.—J. A. Orlando, Jewel.
Dayton, O.—Dayton Automobile Co., Jewel.
Toledo, O.—E. R. Togler, Jewel.
Lima, O.—Ralph De Voe, Jewel.
Canal Dover, O.—E. H. Miller, Jewel.
Kensington, O.—J. W. Cox, Jewel.
McComb, O.—J. H. Cavin, Jewel.
Mansfield, O.—J. M. Brown, Jewel.
Youngstown, O.—P. H. Hamilton, Jewel.
Warren, O.—Park Hardware Co., Jewel.
Chicago—Hagmann & Hammerly, Jewel.
Omaha, Neb.—Karbach Auto and Vehicle Co., Jewel.

RECENT INCORPORATIONS

Taunton, Mass.—Robertson Motor Car Co., capital stock $25,000. Incorporators, John M. Robertson, Annie M. Robertson and Harry W. Leavitt.
New York—Auto Robe and Rubber Co., capital stock $20,000, to deal in rubber lap robes and rubber goods. Incorporators, J. Klein and E. M. Klein.
Boston, Mass.—American Auto Parts Co., capital stock $20,000, to deal in motor appliances. Incorporators, F. S. Hawkins, of Roslindale, and S. R. Eaton, of Boston.
Champaign, Ill.—Champaign Automobile Co., of Champaign, capital stock $2,800, to operate a garage and repair shop. Incorporators, Wilson and J. C. Richmond, and M. Savage.
Boston, Mass.—Loring Speed Gauge Co., capital stock $40,000, to deal in motor appliances. Incorporators, George F. and Ernest J. Loring, of Somerville, and B. F. Borhek, of Dorcester.
Seneca Falls, N. Y.—Iroquois Motor Vehicle Co., capital stock $100,000, to manufacture self-propelled cars, carriages, etc. Incorporators, S. B. Bolsford, of Buffalo, and Bessie MacCullum and J. B. Scovell, of Lewiston.
Pittsfield, Mass.—Stilson Motor Car Co., capital stock $100,000. Incorporators, H. M. Stilson, J. M. Burns and G. A. Grounds.

WINTON



How Many Miles?

That car you are thinking of buying—how long will it stand up? Is it a make that has no record of durability, or is it a Winton? If it's a Winton, you are making a safe choice, for the Winton is the car that endures through all the hardships of American motoring.

Witness these specific instances:

82,000 Miles—1902 Winton. Owned by Mr. Geo. Bruce, Sacramento, Cal., and used in rental service. Still running and declared to be good enough for five more years of work.

22,000 Miles—Model K Winton. Owned by Mr. John H. Gibson, Des Moines, Ia. "Hard to find a car that will do better," says Mr. Gibson.

16,835 Miles—Model K Winton. Owned by the Hub Rental Co., Los Angeles, Cal., and used in rental service. Good for several years more.

15,620 Miles—Model K Winton. Owned by Mr. Henry Weber, Goldfield, Nevada. Bought in New York and driven overland to destination. Used constantly around the mining camps and as good today as a new car.

13,000 Miles—1904 Winton. Owned by Mr. Robt. H. Simonds, Warehouse Point, Conn. Delivering such satisfactory service that Mr. Simonds has not seen the necessity of purchasing a newer car.

Buyers of Winton cars do not find it necessary to purchase a new model every year.

If you are buying a car for genuine service, you are absolutely safe in selecting a Winton of any model.

TYPE X-I-V—Four 4½ x 5 OFFSET cylinders, $2500; Runabout, $2500; Limousine, $3500.

MODEL M—Four 5 x 5 OFFSET cylinders; selective, sliding gear transmission; four forward speeds, direct drive on third speed; multiple disc clutch, $3500; Runabout, $3500; Limousine, $4500.

THE WINTON MOTOR CARRIAGE CO., MEMBER A.L.A.M. **Cleveland, Ohio, U. S. A.**

We conduct our own Branch Sales Depots in New York, Boston, Philadelphia, Pittsburg, Chicago, Detroit and London